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Education

Swiss Federal Institute of Technology - Zurich (ETH Zürich) Architecture & Building Systems (A/S) Group Institute of Technology in Architecture (ITA), Department of Architecture (D-ARCH) Doctorate of Sciences (Dr. sc. ETH Zürich) (Ph.D. Equivalent) <i>Dissertation Advisor: Prof. Arno Schlueter, Committee Member: Dr. Stefan Mueller Arisona</i>	Zürich, Switzerland <i>Jan. 2017</i>
National University of Singapore (NUS) Department of the Built Environment Master of Science (MSc. Building) <i>MSc. Thesis Supervisor: Prof. Chandra Sekhar</i>	Singapore <i>Nov. 2011</i>
University of Nebraska - Lincoln (UNL) and Omaha (UNO) Durham School of Architectural Engineering & Construction, Peter Kiewit Institute Master of Architectural Engineering (MAE) Bachelor's of Science in Architectural Engineering (BSAE) <i>MAE Thesis Supervisor: Prof. Gregor Henze</i>	Omaha, NE, USA <i>May 2007</i> <i>May 2006</i>

Academic Appointments

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- **Associate Professor (Tenured), Singapore Management University (SMU), Singapore**
College of Integrative Studies (CIS)
Sep. 2025 - Present
 - **Co-Founder and Scientific Advisor, SpaceMatch Pte. Ltd., Singapore**
Aug. 2021 - Present
R&D Advisor and Co-Founder of an NUS Spin-off focused on indoor environmental and spatial optimization
 - **Associate Professor (Tenured), National University of Singapore (NUS), Singapore**
College of Design and Engineering (CDE), Dept. of the Built Environment (DBE)
Jan. 2024 - Aug. 2025
Deputy Head of Communication and Engagement (Jul. 2022 - Feb. 2025) and creator of the edX Course, *Data Science for Construction, Architecture and Engineering*, that had 43,500+ participants worldwide enrolled (Apr. 2020 and Dec. 2024)
 - **Assistant Professor, National University of Singapore (NUS), Singapore**
Jun. 2017 - Dec. 2023
 - **Post-Doctoral Researcher, Future Cities Laboratory, Singapore-ETH Centre, Singapore**
Nov. 2016 - Mar. 2017
Performance verification on the 3for2 Project focused on a decentralized ventilation system.
 - **Visiting Researcher, Vermont Energy Investment Corporation (VEIC), Burlington, VT, USA**
Jun. - Nov. 2015
Data science guest researcher for analyzing time-series data from large numbers of non-residential buildings.

- **Institute of Technology in Architecture Fellow**, ETH Zürich, Zürich, Switzerland
Oct. 2012 - Oct. 2016
Fully funded 3.5-year competitive Institute of Technology in Architecture Fellowship.
- **Co-Founder and Chief Technology Officer (CTO)**, Optiras Pte. Ltd., Singapore
Jul. 2010 - Apr. 2012
Cleantech start-up that was seed-funded by the Singapore NRF and SWG Incubator.
- **Fulbright Scholar and Researcher**, National University of Singapore, Singapore
Jul. 2009 - Jun. 2010
Fulbright research grant to enhance the core EnergyPlus whole building simulation engine.
- **Research and Development Manager**, Ezenics (formerly Sensus M.I.), Omaha, NE, USA
Oct. 2008 - Jun. 2009
Leader of an R&D team focused on connectivity, development, and implementation of plug-n-play solutions

Awards and Honors

Major Global Research Awards and Rankings

- **Stanford University World's Top 2% Scientists Ranking based on 2021, 2022, and 2023 Performance**, 2022, 2023, and 2024
- **2022 Annual Best Paper Award in the Building and Environment Journal**, 2023, Role: Co-Author within a large group from Annex 79 Subtask 1 led by Giorgia Chinazzo, Paper title: *Quality criteria for multi-domain studies in the indoor environment: Critical review towards research guidelines and recommendations*
- **2022 Best Poster Award, 17th International Conference of the International Society of Indoor Air Quality & Climate (Indoor Air 2022) Conference**, Kuopio, Finland 2022, Role: Lead, and First Author of Conference Paper, Paper Title: *Smartwatch-based ecological momentary assessments for occupant wellness and privacy in buildings*
- **2020 Best Paper Awards in the Buildings Journal, First Place Award**, 2022, Role: Senior/Last and Corresponding Author, Paper Title: *Humans-as-a-Sensor for buildings — Intensive longitudinal indoor comfort models*
- **2017 Best Paper Award, Conference on Carbon Neutral Cities - Energy Efficiency & Renewables in the Digital Era (CISBAT 2017)**, Lausanne, Switzerland, 2017, Role: Co-Author within project led by Jimeno Fonseca, Paper Title: *Unsupervised load shape clustering for urban building performance assessment*

Major Global or University-level Education Awards and Nominations

- **2024 Best Webinar Award at the IBPSA-USA SimBuild 2024 Conference in Denver, USA** for the online webinar entitled *Skills for Tackling Built Environment Challenges* that was given in Jan. 2023
- **NUS Annual Teaching Education Award (ATEA/ADEA) Honour Roll (2024-2028)**
- **2021, 2022 and 2023 NUS Annual Digital Education Awards (ADEA)**, University-level Award, For AY2019-2020, AY2020-2021, and AY2021-2022 Teaching
- **Finalist for the 2021 Global edX Prize for Exceptional Contributions in Online Teaching and Learning**, International Award, 2021

Fellowships/Scholarships

- ETH Zürich Architecture and Technology Fellowship, 2012-2016
- ASHRAE/IBPSA Conference Student Travel Grant, 2014
- National University of Singapore (NUS) Research Scholarship, 2010
- U.S. Fulbright Student Fellowship to the Republic of Singapore, 2009-2010
- ASHRAE Nebraska Chapter Scholarship, 2005-2006
- Walter Scott Jr. Scholarship, 2002-2006

Research

Peer-reviewed Publications in International Journals

* = Corresponding Author

69. Zhong S*, Chwalek P, Perry N, Ramsay D, Miller C, Lalanne D, Alavi HS, Paradiso JA. *Sensors and sensibilities: Exploring interactions for habitat comfort with an environmental-physiological sensing eyewear in the wild*. Int J Hum Comput Stud. 2025;200(103510):103510. <http://dx.doi.org/10.1016/j.ijhcs.2025.103510>
68. Abdelrahman M, Macatulad E, Lei B, Quintana M, Miller C, Biljecki F*. *What is a Digital Twin anyway? Deriving the definition for the built environment from over 15,000 scientific publications*. Build Environ. 2025;274(112748):112748. <http://dx.doi.org/10.1016/j.buildenv.2025.112748>
67. Zhang W, Quintana M, Miller C*. *Recommender systems and reinforcement learning for human-building interaction and context aware support: A text mining-driven review of scientific literature*. Energy Build. 2025;329(115247):115247. <http://dx.doi.org/10.1016/j.enbuild.2024.115247>
66. Daemei AB*, Lovreglio R, Feng Z, Paes D, Miller C. *Gamification for air quality education: A systematic literature review*. Build Environ. 2025;270(112526):112526. <http://dx.doi.org/10.1016/j.buildenv.2025.112526>
65. Chwalek P*, Zhong S, Perry N, Liu T, Miller C, Alavi HS, Lalanne D, Paradiso J. *A dataset exploring urban comfort through novel wearables and environmental surveys*. Sci Data. 2024;11(1):1423. <http://dx.doi.org/10.1038/s41597-024-04279-9>
64. Alva P*, Mosteiro-Romero M, Miller C, Stouffs R. *Mitigating operational greenhouse gas emissions in ageing residential buildings using an Urban Digital Twin dashboard*. Energy Build. 2024;322(114681):114681. <http://dx.doi.org/10.1016/j.enbuild.2024.114681>
63. Dabirian S*, Miller C, Adli A, Eicker U. *Gaussian-based plug load profile prediction in non-residential buildings archetype*. Appl Energy. 2024;374: 123970. <http://dx.doi.org/10.1016/j.apenergy.2024.123970>
62. Fu C, Kazmi H, Quintana M, Miller C*. *Creating synthetic energy meter data using conditional diffusion and building metadata*. Energy Build. 2024;312: 114216. <http://dx.doi.org/10.1016/j.enbuild.2024.114216>
61. Mosteiro-Romero M*, Quintana M, Stouffs R, Miller C. *A data-driven agent-based model of occupants' thermal comfort behaviors for the planning of district-scale flexible work arrangements*. Build Environ. 2024;257: 111479. <http://dx.doi.org/10.1016/j.buildenv.2024.111479>
60. Liguori A*, Quintana M, Fu C, Miller C, Frisch J, van Treeck C. *Opening the Black Box: Towards inherently interpretable energy data imputation models using building physics insight*. Energy Build. 2024;310: 114071. <http://dx.doi.org/10.1016/j.enbuild.2024.114071>
59. Canaydin A, Fu C, Balint A, Khalil M, Miller C, Kazmi H*. *Interpretable domain-informed and domain-agnostic features for supervised and unsupervised learning on building energy demand data*. Appl Energy. 2024;360: 122741. <http://dx.doi.org/10.1016/j.apenergy.2024.122741>
58. Martin M, Ramani V, Miller C*. *InfraRed Investigation in Singapore (IRIS) Observatory: Urban heat island contributors and mitigators analysis using neighborhood-scale thermal imaging*. Energy Build. 2024;307: 113973. <http://dx.doi.org/10.1016/j.enbuild.2024.113973>
57. Ramani V, Arjunan P, Poolla K, Miller C*. *Semantic segmentation of longitudinal thermal images for identification of hot and cool spots in urban areas*. Build Environ. 2024;249: 111112. <http://dx.doi.org/10.1016/j.buildenv.2023.111112>
56. Lei Y, Tekler ZD, Zhan S, Miller C, Chong A*. *Experimental evaluation of thermal adaptation and transient thermal comfort in a tropical mixed-mode ventilation context*. Build Environ. 2024;248:111043. <http://dx.doi.org/10.1016/j.buildenv.2023.111043>
55. Fu C, Quintana M, Nagy Z, Miller C*. *Filling time-series gaps using image techniques: Multidimensional context autoencoder approach for building energy data imputation*. Appl Therm Eng. 2024;236: 121545. <http://dx.doi.org/10.1016/j.applthermaleng.2023.121545>
54. Hefp C*, Gottkehaskamp B, Miller C, Auer T. *International comparison of weather and emission predictive building control*. Buildings. 2024;14: 288. <http://dx.doi.org/10.3390/buildings14010288>
53. Lin S, Ramani V, Martin M, Arjunan P, Chong A, Biljecki F, Ignatius M, Poolla K, Miller C*. *District-scale surface temperatures generated from high-resolution longitudinal thermal infrared images*. Sci Data. 2023;10: 859. <http://dx.doi.org/10.1038/s41597-023-02749-0>

52. Lorenz C-L*, André M, Abele O, Gunay B, Hahn J, Hensen P, Nagy Z, Ouf MM, Park JY, Yaduvanshi NS, **Miller C**. *A repository of occupant-centric control case studies: Survey development and database overview*. Energy Build. 2023;300: 113649. <http://dx.doi.org/10.1016/j.enbuild.2023.113649>
51. Nagy Z*, Gunay B, **Miller C**, Hahn J, Ouf M, Lee S, Hobson B, Abuimara T, Bandurski K, André M, Lorenz C-L, Crosby S, Dong B, Jiang Z, Peng Y, Favero M, Park J-Y, Nweye K, Nojedehe P, Stopps H, Sarran L, Brackley C, Bassett K, Govertsen K, Koczorek N, Abele O, Casavant E, Kane M, O'Neill Z, Yang T, Day J, Huchuk B, Hellwig R, Vellei M. *Ten questions concerning occupant-centric control and operations*. Build Environ. 2023; 110518. <http://dx.doi.org/10.1016/j.buildenv.2023.110518>
50. Ramani V, Martin M, Arjunan P, Chong A, Poolla K, **Miller C***. *Longitudinal thermal imaging for scalable non-residential HVAC and occupant behaviour characterization*. Energy Build. 2023;287: 112997. <http://dx.doi.org/10.1016/j.enbuild.2023.112997>
49. Kazmi H*, Fu C, **Miller C**. *Ten questions concerning data-driven modelling and forecasting of operational energy demand at building and urban scale*. Build Environ. 2023;239: 110407. <http://dx.doi.org/10.1016/j.buildenv.2023.110407>
48. Jin X, Zhang C, Xiao F*, Li A, **Miller C**. *A review and reflection on open datasets of city-level building energy use and their applications*. Energy Build. 2023;285: 112911. <http://dx.doi.org/10.1016/j.enbuild.2023.112911>
47. Mosteiro-Romero M*, **Miller C**, Chong A, Stouffs R. *Elastic buildings: Calibrated district-scale simulation of occupant-flexible campus operation for hybrid work optimization*. Build Environ. 2023;237: 110318. <http://dx.doi.org/10.1016/j.buildenv.2023.110318>
46. Peng Y, Antanuri N, Lau S-K, Jebelli B, Jusuf SK, **Miller C**, Teo YT, Chua YX, Chong A*. *Experimental assessment of thermal and acoustics interactions on occupant comfort in mixed-mode buildings*. Build Environ. 2023;238: 110342. <http://dx.doi.org/10.1016/j.buildenv.2023.110342>
45. Tekler ZD, Lei Y, Peng Y, **Miller C**, Chong A*. *A hybrid active learning framework for personal thermal comfort models*. Build Environ. 2023;234: 110148. <http://dx.doi.org/10.1016/j.buildenv.2023.110148>
44. Teitelbaum E*, **Miller C**, Meggers F. *Highway to the Comfort Zone: History of the Psychrometric Chart*. Buildings. 2023;13: 797. <http://dx.doi.org/10.3390/buildings13030797>
43. Liu P, Zhao T, Luo J, Lei B, Frei M, **Miller C**, Biljecki F*. *Towards Human-centric Digital Twins: Leveraging Computer Vision and Graph Models to Predict Outdoor Comfort*. Sustainable Cities and Society. 2023;93: 104480. <http://dx.doi.org/10.1016/j.scs.2023.104480>
42. Quintana M, Schiavon S, Tartarini F, Kim J, **Miller C***. *Cohort comfort models — Using occupant's similarity to predict personal thermal preference with less data*. Build Environ. 2023;227: 109685. <http://dx.doi.org/10.1016/j.buildenv.2022.109685>
41. Tartarini F*, Schiavon S, Quintana M, **Miller C**. *Personal comfort models based on a 6-month experiment using environmental parameters and data from wearables*. Indoor Air. 2022;32: e13160. <http://dx.doi.org/10.1111/ina.13160>
40. Chinazzo G*, Andersen RK, Azar E, Barthelmes VM, Becchio C, Belussi L, Berger C, Carlucci S, Corngati SP, Crosby S, Danza L, de Castro L, Favero M, Gauthier S, Hellwig RT, Jin Q, Kim J, Khanie MS, Khovalyg D, Lingua C, Luna-Navarro A, Mahdavi A, **Miller C**, Mino-Rodriguez I, Pigliautile I, Pisello AL, Rupp RF, Sadick AM, Salamone F, Schweiker M, Syndicus M, Spigiantini G, Vasquez NG, Vakalis D, Vellei M, Wei S. *Quality criteria for multi-domain studies in the indoor environment: Critical review towards research guidelines and recommendations*. Build Environ. 2022;226: 109719. <http://dx.doi.org/10.1016/j.buildenv.2022.109719>
39. Pantelic J*, Nazarian N, **Miller C**, Meggers F, Lee JKW, Licina D. *Transformational IoT sensing for air pollution and thermal exposures*. Frontiers in Built Environment. 2022;8. <http://dx.doi.org/10.3389/fbuil.2022.971523>
38. Martin M, Chong A, Biljecki F, **Miller C***. *Infrared thermography in the built environment: A multi-scale review*. Renewable Sustainable Energy Rev. 2022; 165: 112540. <http://dx.doi.org/10.1016/j.rser.2022.112540>
37. Quintana M, Stoeckmann T, Park JY, Turowski M, Hagenmeyer V, **Miller C***. *ALDI++: Automatic and parameter-less discord and outlier detection for building energy load profiles*. Energy Build. 2022; 265: 112096. <http://dx.doi.org/10.1016/j.enbuild.2022.112096>
36. Salamone F*, Chinazzo G, Danza L, **Miller C**, Sibilio S, Masullo M. *Low-cost thermohygrometers to assess thermal comfort in the built environment: A laboratory evaluation of their measurement performance*. Buildings. 2022; 12: 579. <http://dx.doi.org/10.3390/buildings12050579>

35. Leprince J*, Madsen H, **Miller C**, Real JP, van der Vlist R, Basu K, Zeiler W. *Fifty shades of grey: Automated stochastic model identification of building heat dynamics*. Energy Build. 2022; 266: 112095. <http://dx.doi.org/10.1016/j.enbuild.2022.112095>
34. Abdelrahman MM, **Miller C***. *Targeting occupant feedback using digital twins: Adaptive spatial-temporal thermal preference sampling to optimize personal comfort models*. Build Environ. 2022; 218: 109090. <http://dx.doi.org/10.1016/j.buildenv.2022.109090>
33. Kazmi H*, Keijzers M, Mehmood F, **Miller C**. *Energy balances, thermal performance, and heat stress: Disentangling occupant behaviour and weather influences in a Dutch net-zero energy neighborhood*. Energy Build. 2022; 263: 112020. <http://dx.doi.org/10.1016/j.enbuild.2022.112020>
32. **Miller C***, Picchetti B, Fu C, Pantelic J. *Limitations of machine learning for building energy prediction: ASHRAE Great Energy Predictor III Kaggle competition error analysis*. Science and Technology for the Built Environment. 2022; 1–18. <http://dx.doi.org/10.1080/23744731.2022.2067466>
31. Fu C, **Miller C***. *Using Google Trends as a proxy for occupant behavior to predict building energy consumption*. Appl Energy. 2022; 310: 118343. <http://dx.doi.org/10.1016/j.apenergy.2021.118343>
30. Abdelrahman MM, Chong A, **Miller C***. *Personal thermal comfort models using digital twins: Preference prediction with BIM-extracted spatial-temporal proximity data from Build2Vec*. Build Environ. 2022; 207: 108532. <http://dx.doi.org/10.1016/j.buildenv.2021.108532>
29. Arjunan P*, Poolla K, **Miller C**. *BEEM: Data-driven building energy bEnchMarking for Singapore*. Energy Build. 2022; 111869. <http://dx.doi.org/10.1016/j.enbuild.2022.111869>
28. Leprince J*, **Miller C**, Zeiler W. *Data mining cubes for buildings, a generic framework for multidimensional analytics of building performance data*. Energy Build. 2021; 248: 111195. <http://dx.doi.org/10.1016/j.enbuild.2021.111195>
27. Gunay B*, Nagy Z, **Miller C**, Ouf M, Dong B. *Using Occupant-Centric Control for Commercial HVAC Systems*. ASHRAE Journal. 2021;63: 30–32. <http://bit.ly/3X1TZyb>
26. Roth J, Chadalawada J, Jain RK, **Miller C***. *Uncertainty Matters: Bayesian probabilistic forecasting for residential smart meter prediction, segmentation, and behavioral measurement and verification*. Energies. 2021; 14: 1481. <http://dx.doi.org/10.3390/en14051481>
25. Abdelrahman MM, Zhan S, **Miller C**, Chong A*. *Data science for building energy efficiency: A comprehensive text-mining driven review of scientific literature*. Energy Build. 2021; 110885. <http://dx.doi.org/10.1016/j.enbuild.2021.110885>
24. Joshi A*, **Miller C**. *Review of machine learning techniques for mosquito control in urban environments*. Ecol Inform. 2021; 61: 101241. <http://dx.doi.org/10.1016/j.ecoinf.2021.101241>
23. Periyakoil D*, Das HP, **Miller C**, Spanos CJ, Prata N. *Environmental exposures in Singapore schools: An ecological study*. Int J Environ Res Public Health. 2021; 18: 1843. <http://dx.doi.org/10.3390/ijerph18041843>
22. Quintana M, Arjunan P, **Miller C***. *Islands of misfit buildings: Detecting uncharacteristic electricity use behavior using load shape clustering*. Build Simul. 2021; 14: 119–130. <http://dx.doi.org/10.1007/s12273-020-0626-1>
21. Nazarian N*, Liu S, Kohler M, Lee JKW, **Miller C**, Chow WTL, Alhadad SB, Martelli A, Quintana M, Sundén L, Norford L. *Project Coolbit: Can your watch predict heat stress and thermal comfort sensation?* Environ Res Lett. 2021; 16: 034031. <http://dx.doi.org/10.1088/1748-9326/abd130>
20. Jayathissa P, Quintana M, Abdelrahman M, **Miller C***. *Humans-as-a-Sensor for buildings — Intensive longitudinal indoor comfort models*. Buildings. 2020; 10: 174. <http://dx.doi.org/10.3390/buildings10100174>
19. Roth J*, Martin A, **Miller C**, Jain RK. *SynCity: Using open data to create a synthetic city of hourly building energy estimates by integrating data-driven and physics-based methods*. Appl Energy. 2020; 280: 115981. <http://dx.doi.org/10.1016/j.apenergy.2020.115981>
18. **Miller C***, Arjunan P, Kathirgamanathan A, Fu C, Roth J, Park JY, Balbach C, Gowri K, Nagy Z, Fontanini A, Haberl J. *The ASHRAE Great Energy Predictor III competition: Overview and results*. Science and Technology for the Built Environment. 2020; 1–21. <http://dx.doi.org/10.1080/23744731.2020.1795514>
17. **Miller C***, Kathirgamanathan A, Picchetti B, Arjunan P, Park JY, Nagy Z, Raftery P, Hobson BW, Shi Z, Meggers F. *The Building Data Genome Project 2, energy meter data from the ASHRAE Great Energy Predictor III competition*. Scientific Data. 2020; 7: 368. <http://dx.doi.org/10.1038/s41597-020-00712-x>
16. Arjunan P, Poolla K, **Miller C***. *EnergyStar++: Towards more accurate and explanatory building energy benchmarking*. Appl Energy. 2020; 276: 115413. <http://dx.doi.org/10.1016/j.apenergy.2020.115413>

15. O'Brien W*, Wagner A, Schweiker M, Mahdavi A, Day J, Kjærgaard MB, Carlucci S, Dong B, Tahmasebi F, Yan D, Hong T, Gunay HB, Nagy Z, **Miller C**, Berger C. *Introducing IEA EBC annex 79: Key challenges and opportunities in the field of occupant-centric building design and operation*. Build Environ. 2020; 178: 106738. <http://dx.doi.org/10.1016/j.buildenv.2020.106738>
14. Wang CK*, Tindemans S, **Miller C**, Agugiaro G, Stoter J. *Bayesian calibration at the urban scale: a case study on a large residential heating demand application in Amsterdam*. Journal of Building Performance Simulation. 2020; 13: 347–361. <http://dx.doi.org/10.1080/19401493.2020.1729862>
13. Teitelbaum E*, Jayathissa P, **Miller C**, Meggers F. *Design with Comfort: Expanding the psychrometric chart with radiation and convection dimensions*. Energy and Buildings. 2020. p. 109591. <http://dx.doi.org/10.1016/j.enbuild.2019.109591>
12. Sood T, Janssen P, **Miller C***. *Spacematch: Using environmental preferences to match occupants to suitable activity-based workspaces*. Frontiers in Built Environment. 2020; 6: 113. <http://dx.doi.org/10.3389/fbuil.2020.00113>
11. **Miller C***. *What's in the box?! Towards explainable machine learning applied to non-residential building smart meter classification*. Energy Build. 2019; 199: 523–536. <http://dx.doi.org/10.1016/j.enbuild.2019.07.019>
10. **Miller C***. *More Buildings Make More Generalizable Models—Benchmarking Prediction Methods on Open Electrical Meter Data*. Machine Learning and Knowledge Extraction. 2019; 1: 974–993. <http://dx.doi.org/10.3390/make1030056>
9. Park JY, Yang X, **Miller C**, Arjunan P, Nagy Z*. *Apples or oranges? Identification of fundamental load shape profiles for benchmarking buildings using a large and diverse dataset*. Appl Energy. 2019; 236: 1280–1295. <http://dx.doi.org/10.1016/j.apenergy.2018.12.025>
8. **Miller C***, Meggers F. *Mining electrical meter data to predict principal building use, performance class, and operations strategy for hundreds of non-residential buildings*. Energy Build. 2017; 156: 360–373. <http://dx.doi.org/10.1016/j.enbuild.2017.09.056>
7. **Miller C***, Nagy Z, Schlueter A. *A review of unsupervised statistical learning and visual analytics techniques applied to performance analysis of non-residential buildings*. Renewable Sustainable Energy Rev. 2018; 81: 1365–1377. <http://dx.doi.org/10.1016/j.rser.2017.05.124>
6. **Miller C***, Thomas D, Kampf J, Schlueter A. *Urban and building multiscale co-simulation: case study implementations on two university campuses*. Journal of Building Performance Simulation. 2018; 11: 309–321. <http://dx.doi.org/10.1080/19401493.2017.1354070>
5. Pantelic J, Rysanek A, **Miller C**, Peng Y, Teitelbaum E, Meggers F, Schlueter A*. *Comparing the indoor environmental quality of a displacement ventilation and passive chilled beam application to conventional air-conditioning in the Tropics*. Build Environ. 2018; 130: 128–142. <http://dx.doi.org/10.1016/j.buildenv.2017.11.026>
4. Schlueter A*, Rysanek A, Meggers F, Mast, M, Bruelisauer M, Chen KW, **Miller C**, Pantelic J. *3for2: realizing spatial, material, and energy savings through integrated design*. CTBUH Journal. 2016; 40–45. <https://www.jstor.org/stable/90006203>
3. **Miller C***, Nagy Z, Schlueter A. *Automated daily pattern filtering of measured building performance data*. Autom Constr. 2015; 4 9: 1–17. <http://dx.doi.org/10.1016/j.autcon.2014.09.004>
2. Nagy Z*, Rossi D, Hersberger C, Irigoyen SD, **Miller C**, Schlueter A. *Balancing envelope and heating system parameters for zero emissions retrofit using building sensor data*. Appl Energy. 2014; 131: 56–66. <http://dx.doi.org/10.1016/j.apenergy.2014.06.024>
1. Bruelisauer M, Chen KW, Iyengar R, Leibundgut H, Li C, Li M, Mast M*, Meggers F, **Miller C**, Rossi D, Saber EM, Tham KW, Schlueter A. *BubbleZERO—Design, Construction and Operation of a Transportable Research Laboratory for Low Exergy Building System Evaluation in the Tropics*. Energies. 2013; 6: 4551–4571. <http://dx.doi.org/10.3390/en6094551>

Peer-reviewed Publications in International Conferences

54. Ignatius M, Tong S, Lim J, Xu R, Lu Y, Tan E, Biljecki F, **Miller C**, Wong NH*. *Campus as a Living Lab: Using the BEAM Framework and Digital Twin to Address Urban Microclimate Challenges*. 12th International Conference on Urban Climate, Rotterdam, The Netherlands, 7–11 Jul 2025, ICUC12-867, <https://doi.org/10.5194/icuc12-867,2025>

53. Mosteiro-Romero M*, Park Y, **Miller C**. *People in Cities: Combining subjective occupant feedback with urban-scale data to support indoor and outdoor thermal comfort*. Proceedings of the 5th Asia Conference of the International Building Performance Simulation Association 2024; 2024 pp. 277-284. https://publications.ibpsa.org/proceedings/asim/2024/papers/A18_asim2024_1183.pdf
52. Zhang Y, Favero M, Chwalek P, Zhong S, Lalanne D, Paradiso J, **Miller C**, Sonta A*. *Mind the hazard: Modeling and interpreting comfort with personalized sensing*. Proceedings of the 11th ACM International Conference on Systems for Energy-Efficient Buildings, Cities, and Transportation. ACM; 2024:209-213. <https://doi.org/10.1145/3671127.3698188>
51. Ignatius M, Lim J, Gottkehas Kamp B, Fujiwara K, **Miller C**, Biljecki F*. *Digital twin and wearables unveiling pedestrian comfort dynamics and walkability in cities*. ISPRS Ann Photogramm Remote Sens Spat Inf Sci. 2024;X-4/W5-2024: 195–202. <https://doi.org/10.5194/isprs-annals-x-4-w5-2024-195-2024>
50. Mosteiro-Romero M*, Park Y, **Miller C**. *Converging Smartwatch and Urban Datasets for Sustainable City Planning: A Case Study in Seoul, South Korea*. BuildSim Nordic 2024 - International Building Performance Simulation Association Conference. 2024. <https://doi.org/10.1051/e3sconf/202456203004>
49. **Miller C***, Tan C. *Data science skills for the built environment: Lessons learned from a massive open online Python course for construction, architecture, and engineering*. BuildSim Nordic 2024 - International Building Performance Simulation Association Conference. 2024. <https://doi.org/10.1051/e3sconf/202456206001>
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Book Chapters

- Gunay B, Hobson B, Ouf M, Nagy Z, **Miller C**. *Design of sequences of operation for occupant-centric controls*. In: O'Brien W, Tahmasebi F, editors. *Occupant-Centric Simulation-Aided Building Design Theory, Application, and Case Studies*. Routledge; 2023. <https://bit.ly/3W9r0g0>

Editorials

2. Nagy, Z, **Miller C**, Gupta, R. *Editorial: Message from General and Technical Program Chairs*. BuildSys 2023 - Proceedings of the 10th ACM International Conference on Systems for Energy-Efficient Buildings, Cities, and Transportation, pp. III–IV.
1. Salamone F, Chinazzo G, **Miller C**, Sibilio S, Masullo M. *Editorial: Innovative Human-Centric Investigations and Technologies for Human Wellbeing and Health in the Built Environment*. Frontiers in Built Environment. 2022;8. <http://dx.doi.org/10.3389/fbuil.2022.918643>

Research Funding

20. **PI**, *HEATS: Heat Exposure, AcTivity, and Sleep – Heat Exposure and Nudging Sub-Projects*, 2024–2026, Singapore National Research Foundation (NRF) CREATE Thematic Grant Call
19. **Co-PI**, *HEATS: Heat Exposure, AcTivity, and Sleep – Cooling Homes and Cooling Dorms Sub-Projects*, 2024–2026, Singapore National Research Foundation (NRF) CREATE Thematic Grant Call
18. **Co-PI**, *Multi-scale Digital Twins for the Urban Environment: From Heartbeats to Cities - Phase 2*, 2023–2024, [Reimagine Research Scheme Grant](#) through the NUS Office of the Deputy President of Research and Technology (ODPRT)
17. **PI**, *Towards a BRICK Translation and Mapping Engine with Applications: Automating Building Semantic Data for Scalable Plug-n-Play Onboarding and Analytics*, 2021–2024, Johnson Controls Open Blue Innovation Center EDB Collaborative Project
16. **Co-PI**, *Supporting Cooling NUS Project with BEAM Initiative: Baselineing, Evaluating, Action, And Monitoring NUS Kent Ridge Campus*, 2022–2027, NUS University Campus Infrastructure (UCI)
15. **Travel Grant Recipient**, *Developing a digitalised user-centric POE process that monitors and predicts long-term users' energy use and comfort behaviour void of accuracy-based errors*, 2023, Massey University International Visitor Research Fund 2023
14. **Co-PI**, *Multi-scale Digital Twins for the Urban Environment: From Heartbeats to Cities - Phase 1*, 2022–2023, NUS Reimagine Research Scheme through the Office of the Deputy President of Research and Technology

13. **Co-PI**, *Mixed-mode Ventilation for Office Buildings in the Tropics*, 2021-2023, Cities of Tomorrow (CoT) Grant from the Ministry of National Development (MND) through the Building and Construction Authority (BCA)
12. **PI**, *Ecological Momentary Assessment (EMA) for Built Environment Research*, 2020-2023, Ministry of Education (MOE) Tier 1 Grant through the School of Design and Environment
11. **PI**, *Buildings Can Influence My Health? Using SDE Well Buildings, Wearables, and Data Science to Learn about Buildings' Impact on Occupant Well Being*, 2020-2023, [Learning Innovation Fund - Technology \(LIFT\) Grant](#)
10. **Co-PI**, *The Internet-of-Buildings (IoB) Platform – Visual Analytics for AI Technologies towards a Well and Green Built Environment*, 2020-2023, Ministry of Education (MOE) Tier 1 Grant through the NUS School of Design and Environment
9. **Co-PI**, *Future Resilient Systems (FRS) Module 1.4 - Digital Twin-Enabled System Resilience* NUS Collaboration with the [Future Resilient Systems Laboratory 2](#), Singapore-ETH Center (SEC), 2020-2025, Singapore National Research Foundation (NRF)
8. **PI**, *Blended Module Development - PF1103*, 2019-2021, [Learning Innovation Fund - Technology \(LIFT\) Grant](#)
7. **PI**, *edX Course Development - Intro to Data Science for the Built Environment*, 2019-2021, [Learning Innovation Fund - Technology \(LIFT\) Grant](#)
6. **PI**, *Spacematch: AI-Enhanced Spatial Recommendation System for Co-Working and Activity-Based Working Spaces*, 2019, [NUS Technology Acceleration Program \(TAP\)](#)
5. **Technical Team Lead**, *ASHRAE Great Energy Predictor III Competition Prize Funding*, 2019, ASHRAE Organization
4. **PI**, *Temporal Mining of Energy and Indoor Environmental Quality Data from Buildings*, 2018-2021, NUS Start-up Grant
3. **PI and Theme D Co-leader**, [Building Efficiency and Sustainability in the Tropics 2 \(SinBerBEST2\) Lab - Theme D Data Analytics for the Built Environment](#) NUS Collaboration with the Berkeley Alliance for Research in Singapore (BEARS), 2017-2023, Singapore National Research Foundation (NRF)
2. **PI**, *Using Social Comparison to Promote Electricity and Water Efficiency in Singapore* (NUS Sub-Project), 2017-2020, Part of the BSEWWT (Behavioural Studies in the Energy, Water, Waste, and Transport) Grant from the Singapore National Research Foundation (NRF) through the [Future Resilient Systems \(FRS\) Laboratory](#) at the Singapore ETH Centre (SEC)
1. **PI**, *Smart Devices & Energy Savings in NUS Project*, 2018-2019, (Co-PI from 2017-2018), NUS Office of the Deputy President of Research and Technology (ODPRT)

Highlighted Major Keynote Presentations

5. [BuildSim Nordic 2024, The Biennial Conference of the International Building Performance Simulation Association \(IBPSA\) - Nordic](#), Invited Keynote Speaker with Travel Expenses Sponsored - Helsinki, Finland - *How AI Disrupts: Lessons for the Built Environment from Other Industries* - Jun. 2024
4. [AI in AEC 2024, Artificial Intelligence in Architecture, Engineering and Construction](#) - Invited Keynote Speaker with Travel Expenses Sponsored - Helsinki, Finland - *How AI Disrupts: Lessons for the Built Environment from Other Industries* - Mar. 2024
3. [CLIMA 2022, The 14th REHVA HVAC World Congress](#), Digitization Theme - Invited Keynote Speaker with Travel Expenses Sponsored - Rotterdam, Netherlands - *Scalability, Benchmarking and Skills: A Roadmap for Built Environment Digitization* - May 2022
2. [eSim 2021, The Biennial Conference of International Building Performance Simulation Association \(IBPSA\) - Canada](#), Invited Keynote Speaker - Online - *Measured data? Simulated data? What's the future? Bridging the gap between physics-based and data-driven modeling* - Jun. 2021
1. [BuildSim Nordic 2020, The Biennial Conference of the International Building Performance Simulation Association \(IBPSA\) - Nordic](#), Invited Keynote Speaker - Online - *The Great Energy Predictor III Kaggle Competition - How can we bridge physics-based and data-driven modeling?* - Oct. 2020

Externally-sponsored/Financially-supported Invited Research Talks

12. **MuSIC Doctoral Network Training Week**, Invited Speaker with Sponsored Travel Expenses - Nicosia, Cyprus - *Field-Based Human-Centric Research: Lessons Learned for PhD Students* - May 2025

11. **KU Leuven, Ghent Campus** - Meet the Jury Seminar, Invited Speaker with Sponsored Travel Expenses (including Doctoral Defense Examination duties) - Ghent, Belgium - *The Human Dimension: Using wearable and IoT data to understand buildings and cities better* - Mar. 2025
10. **ISHRAE TechCon 2025 - High Performance Building & Critical Infrastructures** - Invited Speaker with Sponsored Travel Expenses - Manama, Bahrain and Doha, Qatar - *Sustainable Buildings in Hot & Humid Regions: A Human-Centric Perspective* - Jan. 2025
9. **5th International Summer School on Data Science and AI for Energy Engineers** - Invited Speaker with Sponsored Travel Expenses - Leuven, Belgium - *Exploring the Human Dimensions of Energy Forecasting through Open Data and Models* - Jul. 2024
8. **13th International Conference on Engineering, Project, and Production Management (EPPM) 2023** - Invited Speaker with Sponsored Travel Expenses through a New Zealand Academic Travel Grant - Auckland, New Zealand - *Data Science and Big Data Skills for the Built Environment* - Nov. 2023
7. **Asian Development Bank (ADB) NUS Programme for Digital Transformation - Towards a Smart Nation**, Invited Speaker/Panelist with Honorarium - Singapore - *The Human Dimension - Using wearable and IoT data to better understand cities* - Sep. 2022
6. **Aalto University Post-graduate Seminar on Data-Driven Smart Buildings**, Invited Speaker with Sponsored Travel Expenses - Espoo, Finland - *The Role of Open Data and Benchmarking Machine Learning for Built Environment Applications* - Sep. 2022
5. **Tsinghua University - Department of Building Science Seminar**, Invited Speaker with Honorarium - Online - *More Open Data/Models and Better Skills: The Role of Open Data, Machine Learning Skills, and Crowdsourced Models for the Built Environment* - Feb. 2022
4. **C3.ai Digital Transformation Institute - Digital Transformation of the Built Environment Workshop**, Invited Speaker with Honorarium - Online - *The Role of Machine Learning Skills and Crowdsourced Models for the Built Environment* - Oct. 2021
3. **Architectonics Symposium, ASHRAE and ISHRAE Mumbai Chapter**, Invited Speaker (Master Speaker) with Sponsored Travel Expenses - Mumbai, India - *The SDE4 NZEB Case Study: The First New Construction Net Zero Energy (NZEB) and WELL Certified Building in Singapore* - Jul. 2019
2. **International Building Performance Simulation Association (IBPSA) Asia (ASIM) Conference 2018**, Invited Speaker with Sponsored Conference Registration - Hong Kong SAR - *The Importance of Open Source Data for Built Environment Machine Learning Research* - Dec. 2018
1. **Croucher Advanced Study Institute - Symposium on Smart Building Technology, Management, and Fog Computing**, Invited Speaker with Sponsored Travel Expenses - Hong Kong SAR - *Impacting People's Lives Through Data-Driven Innovation in the Built Environment* - Jan. 2018

Invited Panel Participant/Moderator and Minor Keynote Talks

22. **Newcastle University Conference on AI and Data Analytics for Infrastructure, Buildings and Communities Panel**, Invited Panelist - Singapore - *A Like Button for Spaces: Capturing City-Scale Human Experiences via Watch-based Microsurveys* - Apr. 2025
21. **buildingSMART International Summit - Singapore 2024 Spin-off Event: The Role of BIM in Implementing Smart Buildings**, Invited Panelist - Singapore - *Translating the Languages of Buildings: The Importance of System Interoperability* - Mar. 2025
20. **ASHRAE Singapore Distinguished Lecture**, Invited Speaker - Singapore - *A Like Button for Spaces: Capturing City-Scale Human Experiences via Watch-based Microsurveys* - Mar. 2025
19. **Norway-Singapore Science Week - Workshop: Sustainable Cities and Neighbourhoods**, Invited Panelist and Speaker - Singapore - *Human-Building Conversations - Better ways to detect how people perceive the built environment* - Sep. 2023
18. **The 11th Energy Management Action Network Workshop - EMAK11 - Toward Net-Zero Energy Building** - Invited Panelist (Keynote) and Speaker - Singapore - *The Human Dimension of Net Zero Energy Buildings* - Feb. 2023
17. **Norway-Singapore: Smart Nations Workshop - Session 1: Smart and Sustainable Urban Development**, Invited Panelist and Speaker - Singapore - *Sustainable Urban Development R&D in Singapore - Human-centric and Digital Twin-based Approaches* - Jan. 2023
16. **Norway-Singapore Science Week - Workshop: Sustainable Cities and Neighbourhoods**, Invited Panelist and Speaker - Singapore - *The Human Dimension - Using field-based intensive longitudinal data to characterize humans and buildings* - Nov. 2022

15. **United Architects of the Philippines (UAP) - Glasstech Asia 2022: Climate Change and the Future of Sustainability Seminar**, Invited Keynote Speaker and Panelist - Singapore - *Human-centric Machine Learning for Sustainable Buildings* - Oct. 2022
14. **National Technology Enhanced Learning (NTEL) Conference 2022- Panel on Empowering Learning in the Cyber-Physical Era**, Invited Panelist - Singapore - *Teaching Coding Remotely using a MOOC* - Oct. 2022
13. **FOSSASIA Summit - Open Science Panel**, Invited Panelist - Online - Mar. 2022
12. **Becoming an edX Prize Finalist Panel**, Invited Panelist - Online - Feb. 2022
11. **Asian Development Bank Institute Annual Conference - Climate Change Mitigation and Green Finance**, Invited Panelist - Online - *Future-proofing sustainable cooling demand* - Dec. 2021
10. **13th International Conference on Applied Energy (ICAE 2021) - Open Data for Urban Energy Systems**, Invited Panelist - Online - *More Open Data and Better Skills - The Role of Machine Learning Skills and Crowdsourced Models for the Built Environment* - Nov. 2021
9. **Norway-Singapore Science Week– Webinar Program - Sustainable Urban Development**, Invited Panelist and Moderator - Online - *SDE4 Net Zero Energy Building and Technology* - Nov. 2021
8. **Eden Strategy Institute/IMDA - Focus Group for the Tech for Sustainability Playbook**, Invited Panelist - Online - Sep. 2021
7. **International Conference on Sustainability in Energy and Buildings SEB-21**, Invited Keynote Speaker - Online - *Leveraging Open Energy Data for Buildings - From the ASHRAE Great Energy Predictor III Competition to the Annex 81 Open Data Sandbox* - Sep. 2021
6. **IEEE Power & Energy Society General Meeting - The Interplay Between Building Energy Efficiency and Demand Response: Implications for Power Systems**, Invited Panelist - Online - *The ASHRAE Great Energy Predictor III Competition: Using Kaggle Machine Learning Model Crowdsourcing for Meter Prediction Innovation* - Jul. 2021
5. **Occupant-centric Design Panel Discussion, 6th Expert Meeting of IEA EBC - Annex 79 - Occupant-Centric Building Design and Operation**, Panel Moderator and Planner - Online - *What exactly is occupant-centric building design? – Different perspectives but common sense or domain-dependent approaches?* - Apr. 2021
4. **International Facility Management Expo Series (iFAME) - Webinar: Remodeling FM for the Future**, Invited Panel Speaker - Online - *Remodeling Data Science with FM* - Feb. 2021
3. **Norway-Singapore Science Week Symposium**, Invited Panel Speaker and Moderator - Online - *The Role of Universities in Sustainable Urban Development* - Oct. 2020
2. **ArchXpo 2018, Speaker at United Architects of the Philippines (UAP) Symposium**, Panel Speaker - Singapore - *Impacting People's Lives Through Data-Driven Innovation in the Built Environment* - Oct. 2018
1. **Singapore-ETH Center (ETH Zürich) - Guest Lecture at a Career Talk Seminar**, Invited Panel Speaker - Singapore - *Getting a Tenure-Track Position at NUS* - May 2018

Conference Seminar, Webinar, and Workshop Presentations/Posters (w/o Publication)

35. **AI 4 X 2025**, Invited Speaker - Singapore - *Cozie and Kaggle: Crowdsourcing Data and Models for AI-driven Urban Heat and Energy Solutions* - Jul. 2025
34. **University of California, Berkeley - Center for the Built Environment (CBE) Industry Day**, Invited Speaker - Berkeley, CA, USA - *Make Yourself Comfortable: Nudging Heat and Noise Mitigation Using Smartwatch Interventions* - Apr. 2025
33. **Comfort At The Extremes (CATE) 2024 Conference**, Poster Presenter - Seville, Spain - *Towards scalable smartwatch-collected subjective data collection for environmental comfort at the city-scale* - Nov. 2024
32. **MuSIC Doctoral Network Training Week**, Invited Speaker - Online - *Using Wearables and IoT Data to Understand Buildings and Cities Better* - May 2024
31. **AIVC-ASC Technical Conference 2024 - Ventilation, IEQ, and Sustainability**, Invited Speaker - Singapore - *Using Wearables and IoT Data to Understand Buildings and Cities Better* - Apr. 2024
30. **Digital Transition in the Design of Built Environment Seminar - Nanjing University**, Invited Speaker - Online - *The Human Dimension - Using wearable and IoT data to better understand cities* - Dec. 2023

29. **IBPSA-USA Research Committee Webinar**, Invited Speaker - Online - *Skills for Tackling Built Environment Challenges* - Jan. 2023
28. **Fifth Plenary Meeting of IEA EBC - Annex 81 - Data-Driven Smart Buildings**, Activity Leader and Speaker - Gothenburg, Sweden - *Annex 81 - Activity D3 Update* - Oct. 2022
27. **8th International Symposium on Occupant Behaviour (OB-22) and 9th Expert Meeting of IEA EBC - Annex 79 - Occupant-Centric Building Design and Operation**, Lead Planner, Facilitator, and Speaker - Singapore - *OB-22 and Annex 79 Opening and Closing* - Sep. 2022
26. **US National Science Foundation (NSF) - International Research Experiences for Students (IRES) Seminar** - The Center of Leadership Development in Built Environment Sustainability, Invited Speaker - Singapore - *The Human Dimension - Using field-based intensive longitudinal data to characterize humans and buildings* - Sep. 2022
25. **IBPSA-Singapore and ASHRAE Singapore Chapter** - Joint Webinar, Invited Speaker - Online - *Human-Building Interaction using Wearables and ML Benchmarking* - Aug. 2022
24. **University of Witwatersrand - Construction Economics and Management (CEM) Research Series Webinar**, Invited Speaker - Online - *Scalability, Benchmarking, and Skills: A Roadmap for Built Environment Digitisation* - Jul. 2022
23. **SinBerBEST2 Program Symposium for the Berkeley Education Alliance for Research in Singapore (BEARS)** - Singapore - *InfraRed Investigation in Singapore (IRIS)* - Jul. 2022
22. **Indoor Air 2022 Conference Workshop - Workshop Planner and Presenter** - Kuopio, Finland - *Python Crash Course and Mini-Hackathon for Occupant-Centric Researchers* - Jun. 2022
21. **Vietnam Energy Efficiency Building Week VEEBW 2021 - Unlock Net-zero Commercial buildings – Rooftop Solar & Energy Efficiency Forum**, Invited Speaker - Online - *SDE4 Learning Trail and Digital Tools for NZEBs* - Nov. 2021
20. **International Facilities Management Conference 2021**, Invited Speaker - Online - *FM Powered by AI* - Nov. 2021
19. **ASHRAE Ireland Chapter Webinar**, Invited Speaker - Online - *Why Building Industry Professionals Should Learn to Code!* - Jul. 2021
18. **Singapore-IEA Regional Training Programme on Low Carbon Buildings - Module 2: Smart, Clean and Energy Efficient Building Systems and Operations**, Invited Speaker - Online - Jul. 2021
17. **IBPSA-USA Education Committee - Webinar on Programming for Energy Modellers**, Invited Speaker - Online - *Python for Building Energy Modelers* - Jul. 2021
16. **BCA-SIFMA Industry Sharing on Smart FM and Digitalisation**, Invited Speaker - Online - *Metadata Schemas for Facilities Management – Why? And How?* - May 2021
15. **7th International Symposium on Occupant Behaviour (OB-21)**, Contributing Speaker - Online - *Moving Beyond Thermal Comfort: Capturing Wellness-related Occupant Perceptions Related to Privacy, Movement and Airborne Disease Transmission* - Apr. 2021
14. **6th International Symposium on Occupant Behaviour (OB-20) and 5th Expert Meeting of IEA EBC - Annex 79 - Occupant-Centric Building Design and Operation**, Contributing Speaker and Moderator - Online - *The New Normal: Technologies to Address Rapid Digitization and Diversification of How and Where Occupants Work and Live* - Sep. 2020
13. **United Architects of the Philippines (UAP) Symposium**, Invited Speaker - Online - *Data Science for the Building Industry Research and Skills that will Change the Industry* - Sep. 2020
12. **Annex 81 Data-Driven Buildings Symposium**, Contributing Speaker - Online - *Crowdsourcing Machine Learning for Building Energy Prediction: Learning from the ASHRAE Great Energy Predictor III Kaggle Competition* - Jun. 2020
11. **ASHRAE 2020 Annual Meeting, Seminar Speaker - Seminar 49 - Occupant-Centric Building Design and Operation: Implementation Case Studies** - Online - *Spatial Optimization and Flex-Based Workspaces: A Big Opportunity for Occupant-Centric Building Controls and Operations?* - Jun. 2020
10. **ASHRAE 2020 Annual Meeting, Seminar Speaker - Seminar 12 - Winners and Winning Solutions from the ASHRAE Great Energy Predictor III Machine Learning Competition** - Online - *Overview Analysis of the Great Energy Predictor (GEP) III Competition* - Jun. 2020
9. **5th International Symposium on Occupant Behaviour (OB-20) and 4th Expert Meeting of IEA EBC - Annex 79 - Occupant-Centric Building Design and Operation**, Contributing Speaker and Moderator - Online - *What do occupants want? Let's ask them using smartwatches and Cozie* - Apr. 2020

8. **ASHRAE 2020 Winter Meeting - Seminar Speaker – Seminar 20 - Occupant-Centric Building Design and Operation: State of the Art and Challenges, Part 2** - Orlando, FL, USA - *What Do Occupants Want? Let's Ask Them* - Feb. 2020
7. **ASHRAE 2020 Winter Meeting - Seminar Speaker – Seminar 23 - The Great Energy Predictor Competition III** – Orlando, FL, USA - *Data Collection and Result Analysis for the Predictor Competition III* - Feb. 2020
6. **3rd Expert Meeting of IEA EBC - Annex 79 - Occupant-Centric Building Design and Operation**, Contributing Speaker and Moderator - Perugia, Italy - *Overview of Subtask 4 Activities and Research Introduction* - Sep. 2019
5. **SinBerBEST2 Program Symposium for the Berkeley Education Alliance for Research in Singapore (BEARS)** – Singapore - *Personalities of Buildings - Crowd-sourced Machine Learning Models for City-Scale Analytics: The Great Energy Predictor Competition 2019* - Aug. 2019
4. **ASHRAE 2019 Annual Meeting - Seminar Speaker - Seminar 62** - Kansas City, MO, USA - *The Great Energy Predictor Shootouts I and II: Revisited* - Jun. 2019
3. **US National Science Foundation (NSF) - RCN-SEES: Predictive Modeling Network for Sustainable Human-Building Ecosystems (SHBE)**, Workshop Speaker - Singapore - *Innovative Occupant Engagement: The SpaceMatch/Learning Trail Crowdsourced Feedback and Comfort Recommendation Engine* - Jan. 2019
2. **10th International Conference on Urban Climate (ICUC)**, Seminar Speaker - New York City, NY, USA - *Crowdsourcing Personal Thermal Comfort and Heat Stress Responses using Wearable Devices* - Aug. 2018
1. **SinBerBEST2 Program Symposium for the Berkeley Education Alliance for Research in Singapore (BEARS)**, Symposium Speaker - Singapore - *Personalities of Buildings - AI-Generated Building Behaviour Analysis as the Next Generation of Benchmarking* - Jul. 2018

Invited/Guest Research Talks/Visits at Universities/Organizations

28. **Delft University of Technology (TU Delft)** - AE+T Bites Lunch Seminar, Invited Speaker - Delft, Netherlands - *The Human Dimension: Using wearable and IoT data to understand buildings and cities better* - Mar. 2025
27. **Oslo Metropolitan University (OsloMet)** - Department of Built Environment, Invited Speaker - Oslo, Norway - *Innovations in Human-Building Interaction and Modeling - Better ways to detect and predict how people perceive the built environment* - Mar. 2024
26. **Norwegian University of Science and Technology (NTNU)** - Department of Architecture and Technology, Invited Speaker - Trondheim, Norway - *Innovations in Human-Building Interaction and Modeling - Better ways to detect and predict how people perceive the built environment* - Mar. 2024
25. **Swiss Federal Institute of Technology - Lausanne (EPFL)** - Human-Oriented Built Environment Lab, Invited Speaker - Fribourg, Switzerland - *Human-Building Conversations - Better ways to detect how people perceive the built environment* - Sep. 2023
24. **Massey University** - School of the Built Environment, Invited Speaker - Auckland, New Zealand - *Human-Building Conversations - Better ways to detect how people perceive the built environment* - Aug. 2023
23. **Technical University of Denmark (DTU)** - International Centre for Indoor Environment and Energy (ICIEE) Seminar, Invited Speaker - Lyngby, Denmark - *The Human Dimension: Using field-based intensive longitudinal data to characterize humans and buildings* - Oct. 2022
22. **Stanford University** - Urban Informatics Lab Seminar, Invited Speaker (Co-invited with Filip Biljecki) - Palo Alto, CA, USA - *The Human Dimension: Using field-based intensive longitudinal data to characterize humans and buildings* - Jul. 2022
21. **University of California, Berkeley** - Center for the Built Environment Seminar, Invited Speaker (Co-invited with Adrian Chong and Filip Biljecki) - Berkeley, CA, USA - *The Human Dimension: Using field-based intensive longitudinal data to characterize humans and buildings* - Jul. 2022
20. **Lawrence Berkeley National Lab (LBNL)** - Seminar, Invited Speaker (Co-invited with Adrian Chong and Filip Biljecki) - Berkeley, CA, USA - *The Human Dimension: Using field-based intensive longitudinal data to characterize humans and buildings* - Jul. 2022
19. **University of Colorado, Boulder - National Renewable Energy Lab (NREL)** - Seminar, Invited Speaker (Co-invited with Adrian Chong and Filip Biljecki) - Boulder, CO, USA - *The Human Dimension: Using field-based intensive longitudinal data to characterize humans and buildings* - Jul. 2022

18. **Carnegie Mellon University (CMU)** - Intelligent Workplace Lab Seminar, Invited Speaker (Co-invited with Adrian Chong and Filip Biljecki) - Pittsburgh, PA, USA - *The Human Dimension: Using field-based intensive longitudinal data to characterize humans and buildings* - Jul. 2022
17. **Princeton University** - Cooling and Heating for Architecturally Optimized Systems (CHAOS) Lab Seminar, Invited Speaker (Co-invited with Adrian Chong and Filip Biljecki) - Princeton, NJ, USA - *The Human Dimension: Using field-based intensive longitudinal data to characterize humans and buildings* - Jul. 2022
16. **University of Pennsylvania** - Thermal Architecture Lab Seminar, Invited Speaker (Co-invited with Adrian Chong and Filip Biljecki) - Philadelphia, PA, USA (Hybrid) - *The Human Dimension: Using field-based intensive longitudinal data to characterize humans and buildings* - Jul. 2022
15. **Massachusetts Institute of Technology (MIT)** - Sustainable Design Lab Visit (Co-presented with Adrian Chong and Filip Biljecki) - Cambridge, MA, USA (Hybrid) - *The Human Dimension: Using field-based intensive longitudinal data to characterize humans and buildings* - Jun. 2022
14. **University of Toronto** - Building Energy and Indoor Environment Lab Seminar, Invited Speaker - Online - *The Human Dimension: Using field-based intensive longitudinal data to characterize humans and buildings* - Jun. 2022
13. **Technical Advisory Group Meeting for DOE BTO's Semantic Interoperability R&D**, Invited Participant - Online - Nov. 2021
12. **Concordia University** - Guest Research Lecture, Invited Speaker - Online - *Building and Urban Data Science Lab Overview* - Feb. 2021
11. **Swiss Federal Institute of Technology - Zurich (ETH Zürich)** - Design++ Center Guest Research Lecture, Invited Speaker - Online - *Towards Growing the Data Science Community in the Built Environment: Kaggle Competitions, MOOCs, and Encouraging Architects and Engineerings to become Coders!* - Dec. 2020
10. **University of Virginia** - Guest Research Presentation, Invited Speaker - Charlottesville, VA, USA - *Crowd-sourcing Machine Learning for Buildings: Building Data Genome Project 2.0* - Jan. 2020
9. **Princeton University** - Guest Research Meeting, Invited Speaker - Princeton, NJ, USA - *Crowdsourcing Machine Learning for Buildings: Building Data Genome Project 2.0* - Jan. 2020
8. **Kajima Technical Research Institute Singapore (KaTRIS)** - Seminar, Invited Speaker - Singapore - *Next Generation Techniques for Understanding Occupant Behavior and Satisfaction in Buildings* - Oct. 2019
7. **Lawrence Berkeley National Laboratory (LBNL)** - Lunch Talk, Invited Speaker - Berkeley, CA, USA - *Data Science Meets ASHRAE: The Great Energy Predictor Competition III* - Oct. 2019
6. **Stanford University** - Urban Informatics Lab Seminar, Invited Speaker - Palo Alto, CA, USA - *Overview of the Building and Urban Data Science Lab* - Jun. 2019
5. **Yale University** - Guest Research Lecture at School of Forestry & Environmental Studies, Invited Speaker - New Haven, CT, USA - *Personalities of Buildings - AI-Generated Building Behaviour Analysis as the Next Generation of Benchmarking* - Aug. 2018
4. **Siemens Building Technologies Corporate Headquarters** - Guest Research Lecture, Invited Speaker - Zug, Switzerland - *Towards Utilizing the Huge Amounts of Data from IoT in Buildings* - Jun. 2018
3. **Swiss Federal Institute of Technology - Zurich (ETH Zürich)** - Institute of Technology in Architecture (ITA) Guest Research Lecture, Invited Speaker - Zürich, Switzerland - *Impacting People's Lives Through Data-Driven Innovation in the Built Environment* - Jun. 2018
2. **University of California, Berkeley** - Center for the Built Environment (CBE) Guest Research Lecture and Lunch Talk, Invited Speaker - Berkeley, CA, USA - *Impacting People's Lives Through Data-Driven Innovation in the Built Environment* - Mar. 2018
1. **Delft University of Technology (TU Delft)** - Guest Research Lecture, Invited Speaker - Delft, Netherlands - *Fast, Exploratory, and Scalable: Data Science for Sustainable, High-Performance Buildings* - Nov. 2017

Digital Media

8. [edX Press Release](#) - *Building the Future: How This edX Course Is Helping Architects and Engineers Harness the Power of Data* - Nov. 2022
7. [International Building Performance Simulation Association \(IBPSA\) World Newsletter](#) - *Data-driven simulation: What's the drive? - Eleonora Brembilla interviews Laure Itard, Clayton Miller, and Ruchi Choudhary* - Oct. 2022

6. [Eco-Business](#) - *Nurturing greener tenants for more sustainable buildings* - Mar. 2022
5. [ASHRAE Journal Newsletter](#) - *Searching for the Best Data-Driven Energy Prediction Techniques* - Apr. 2021
4. [Tech in Asia](#), [NUS News](#), [Building Review Journal](#) - *NUS and Johnson Controls embark on S\$5 million research to co-create people-centric smart building systems* - Mar. 2021
3. [NUS News](#) - *A Class Of Their Own: Building the future with data* - Mar. 2021
2. [ArchDaily](#) - *Clayton Miller on Data Science in Architecture: the Academic and Industrial Field are Just Starting* - Oct. 2020
1. [NUS News](#) - *Learning goes global: NUS launches online courses for learners worldwide* - Oct. 2020

Research and Professional Digital Platforms

- [ORCID Profile](#), [Scopus \(Elsevier Profile\)](#), [NUS Profile](#), [Web of Science Profile](#), [Loop \(Frontiers Profile\)](#), [ACM Digital Library Profile](#), [Sciprofiles \(MPDI Profile\)](#), [edX Profile](#), [BUDS Lab Website](#)
- [LinkedIn](#) (11,300+ Followers/connections, 519,000 Impressions and 11,700 Engagements (Likes/Comments) in the last 365 days as of Jul. 2024)
- [GitHub - BUDS Lab](#) (160 Repositories, 64 Members/Collaborators, and 99 Followers as of Jul. 2024)
- [GitHub - Individual](#) (87 Repositories and 309 Followers as of Jul. 2024)
- [Stackoverflow](#) (190k+ people reached 955 days visited in the last 13 years and 4 months)
- [Kaggle](#) (Datasets Expert - Ranked #921 out of 15,688, 31 Datasets, 204 Followers as of Jul. 2024)
- [ResearchGate - BUDS Lab](#), [ResearchGate - Individual](#) (1,677 Followers as of Jul. 2024)

Teaching

Singapore Management University (SMU)

- Course Coordinator, Lecturer, **Graduate Student Research Methods**, Planned for Jan. 2026
- Lecturer, **COR3001: Big Questions**, Planned for Jan. 2026

National University of Singapore (NUS)

- Course Coordinator, Lecturer (100% of the lectures), and Course Founder, **BPS5229 Data Science for the Built Environment**, 2019 - 2025
- Course Coordinator, Co-Lecturer (70% of the lectures), **BPS5223 Passive Design**, with Assoc. Prof. David Cheong, 2017 - 2024
- Co-Lecturer (23% of the lectures), **BPS5222 Indoor Environmental Quality**, with Prof. Chandra Sekhar, Assoc. Prof. Kwok Wai Tham and Siew Eang Lee (with Assoc. Prof. Eddie Lau 2021-2023), 2017 - 2025
- Co-Lecturer (46% of the lectures), **PF3211 AI Applications for the Built Environment**, with Asst. Prof. Maomao Hu, (with Asst. Prof. Vincent Gan 2022-2023 and Asst. Prof. Yan Ke, 2021 - 2022), 2022 - 2024
- Lecturer and Course Founder, **edX Data Science for Construction, Architecture and Engineering**, Massive Open Online Course (MOOC) 2020-2024 - **43,500+ participants worldwide, 1,830+ Verified Certificates**
- Course Coordinator, Course Co-Founder, Co-Lecturer (54% of the lectures), **IPM/PF1103 Digital Construction**, with Asst. Prof. Vincent Gan (with Asst. Prof. Wang Qian 2017-2022), 2017 - 2023
- Co-Lecturer (46% of the lectures), **PF4501 Total Building Performance**, with Assoc. Prof. Kwok Wai Tham, 2017 - 2020
- Co-Lecturer (23% of the lectures), **BPS5228 Building Materials and Structures**, with Asst. Prof. Kwok Wei Shah, 2017 - 2019
- Co-Lecturer (46% of the lectures), **PF2501/PF2102 Structural Systems**, with Assoc. Prof. Yang Miang Goh, 2017 - 2019

Short Courses and Workshops

5. **NUS SCALE Executive Course on Placemaking: Creating liveable and loveable spaces** - Singapore - *Data Science, IoT, Wearables, and other Technologies for Placemaking* - Lecture (Paid Consulting) - Nov. 2020, Jan. 2021, Jul. 2021, Jan. 2022, Apr. 2022
4. **Narxoz University, Narxoz Business School** - Almaty, Kazakhstan - *Big Data for Managers and Decision-makers* - Two Day Workshop (Paid Consulting) - Sep. 2018 and May 2019
3. **Verny Capital** - Astana, Kazakhstan - *Big Data for Managers and Decision-makers* - Two Day Workshop (Paid Consulting) - Sep. 2018
2. **SimAUD 2018 Conference** - Delft, Netherlands - *Python for Building Performance Analysis* - Half-day Workshop - Jun. 2018
1. **Arm in Arm Training and Consultancy - Ministry of Education (MOE)** - Singapore - *Future Cities/ Data Driven Building Design Presentation to MOE Students* (Paid Consulting) - Aug. 2017

Guest Teaching Lectures

11. **Singapore Management University (SMU)**, Guest Lecture - Singapore - *AI and Data Disrupting in the Built Environment? Case Study Discussion of Urban Analytics* - Apr. 2025
10. **Hari Shankar Singhania School of Business (HSB)**, Guest Lecture - Online - *Urban Analytics Crash Course for DBAs* - Feb. 2025
9. **Technion - Cornell Tech.**, Guest Lecture - Online - *The Human Dimension - Using field-based intensive longitudinal data to characterize humans and buildings* - Jun. 2023
8. **IIT Bombay**, Guest Lecture - Online - *The Role of Open Data and Benchmarking Machine Learning for Built Environment Applications* - Mar. 2023
7. **Aarhus University**, Guest Lecture - Aarhus, Denmark - *The Role of Open Data and Benchmarking Machine Learning for Built Environment Applications* - Oct. 2022
6. **Prince Mohammad Bin Fahd University**, Guest Lecture - Online - *Placemaking using IoT, Wearables and Data Science* - Oct. 2021
5. **National Autonomous University of Mexico (UNAM)**, Guest Lecture - Online and Recorded for the Digital Course *Building with Energy Efficiency and Thermal Comfort in Latin America - Why Building Industry Professionals Should Learn to Code!* - Oct. 2021
4. **University of Texas at Austin**, Guest Lecture - Online - *What do occupants want? Let's ask them using smartwatches and Cozie* - Dec. 2020
3. **Princeton University**, Guest Lecture - Online - *What do occupants want? Let's ask them using smartwatches and Cozie* - Apr. 2020
2. **University of New South Wales (UNSW)**, Digital Cities Guest Lecture - Sydney, Australia - *Introduction to Data Science for Environmental Sensing* - Feb. 2019
1. **Singapore University of Technology and Design (SUTD)**, Guest Lecture - Singapore - *A Feedback Loop to Design* - Nov. 2018

Theses and Dissertations

NUS Internal Ph.D./Master's Degree (Research) Main Supervisor

6. Wenhao Zhang – Started **NUS Ph.D.** in Jan. 2024
5. Yun Xuan Chua - Started **NUS Master's Degree (Research)** in Jan. 2023, Submitted in May 2024, Completed in Nov. 2024
4. Chun Fu – Started **NUS Ph.D.** in Jan. 2020, Passed Qualifying Exam in Sep. 2022, Defended successfully in Mar. 2024, Completed in Jul. 2023
3. Matias Quintana - Started **NUS Ph.D.** in Aug. 2018, Passed Qualifying Exam in Jun. 2020, Defended successfully in Oct. 2022, Completed in Feb. 2023
2. Mahmoud Abdelrahman - Started **NUS Ph.D.** in Aug. 2018, Passed Qualifying Exam in Oct. 2020, Defended successfully in Mar. 2022, Completed in Apr. 2022
1. Irvin Tang Kaijun - Started **NUS Ph.D.** in Jan. 2017, Transitioned supervisors in Oct. 2017, Transitioned to **NUS Master's Degree (Research)** in Jun. 2021, Submitted MSc. in Jan. 2022, Completed MSc. in Jun. 2022

NUS Ph.D./Master's Degree Qualifying Exam and Dissertation/Thesis Examiner

20. Jean You - **NUS Ph.D.** Qualifying Examiner - May 2025
19. Ivan Poon Kin Ho - **NUS Ph.D.** Dissertation Examiner - Apr. 2025
18. Siyu Cheng - **NUS Ph.D.** Qualifying Examiner - Jan. 2025
17. Eikichi Ono - **NUS Ph.D.** Qualifying Examiner - Jan. 2022, Dissertation Examiner - Jan. 2025
16. Yaonan Gu - **NUS Ph.D.** Dissertation Examiner - Nov. 2024
15. Kai Chen - **NUS Ph.D.** Qualifying Examiner - Oct. 2024
14. Tao Wang - **NUS Ph.D.** Qualifying Examiner - Aug. 2023, Dissertation Examiner - Aug. 2024
13. Yuxin Feng - **NUS Ph.D.** Qualifying Examiner - Aug. 2024
12. Hanjing Zhu - **NUS Ph.D.** Qualifying Examiner - Oct. 2022, Dissertation Examiner - Jul. 2024
11. Feiyang Wei - **NUS Ph.D.** Qualifying Examiner - Jul. 2024
10. Hanzhang Zhan - **NUS Ph.D.** Qualifying Examiner - Dec. 2023
9. Abraham Wu - **NUS Ph.D.** Qualifying Examiner - Dec. 2023
8. Zhuyin Lu - **NUS Ph.D.** Qualifying Examiner - Nov. 2023
7. Xiayi Chen - **NUS MSc.** Thesis Examiner - Oct. 2023
6. Winston Yap - **NUS Ph.D.** Qualifying Examiner - Jul. 2023
5. Pradeep Attavar Alva - **NUS Ph.D.** Qualifying Examiner - Apr. 2023
4. Prashant Anand - **NUS Ph.D.** Dissertation Examiner - May 2019
3. Yiming Liu - **NUS Ph.D.** Qualifying Examiner - Mar. 2019
2. Kuniaki Mihara - **NUS Ph.D.** Qualifying Examiner - Nov. 2018
1. Alexandros Pantazaras - **NUS Ph.D.** Dissertation Examiner - Jun. 2018

External Ph.D./Master's Degree Examiner/Reviewer and/or Committee Member/Co-Advisor

28. Roberto Chiosa - **Polytechnic University of Turin (Politecnico di Torino)** - Turin, Italy (Online Oral Defense Attendance) - Ph.D. Dissertation Examiner - Aug. 2025
27. Vineet Kumar Arya - **Massey University** - Auckland, New Zealand (Written Evaluation Only) - Ph.D. Pre-Examiner - Jun. 2025
26. Quinten Carton - **KU Leuven** - Ghent, Belgium - Ph.D. Dissertation Examiner - Internal Examination (Online Oral Defense Attendance) - Feb. 2025, Public Examination (Externally Funded for In-Person Attendance) - Mar. 2025
25. Christian Hepf - **Technical University Munich (TUM)** - Munich, Germany (Online Oral Defense Attendance) - Ph.D. Dissertation Examiner - Feb. 2025
24. Antonio Liguori - **RWTH Aachen University** - Aachen, Germany (Online Oral Defense Attendance) - Ph.D. Dissertation Examiner - Jan. 2025
23. Ben Gottkehas Kamp - **Technical University Munich (TUM)** - Munich, Germany (Online Oral Defense Attendance) - MSc. Co-supervisor and Examiner - Dec. 2024
22. Kingsley Nweye - **University of Texas at Austin** - Austin, TX, USA (Online Oral Defense Attendance) - Ph.D. Comprehensive Examiner - Sep. 2024, Ph.D. Dissertation Examiner (Online Oral Defense Attendance) - Nov. 2024
21. Tobias Bruder mueller - **Swiss Federal Institute of Technology - Zurich (ETH Zürich)** - Zurich, Switzerland (Externally Funded for In-Person Attendance) - Ph.D. Dissertation Examiner - Oct. 2024
20. Arlinda Bresa - **University of Zagreb** - Zagreb, Croatia (Externally Funded for In-Person Attendance) - Ph.D. Committee Member - Oct. 2021, Ph.D. Dissertation Examiner - Sep. 2024
19. Archana A. P. - **Indian Institute of Technology Madras (IIT Madras)** - Chennai, India (Online Oral Defense Attendance) - Ph.D. Dissertation Examiner - Jul. 2024
18. Azin Velashjerdi Farahani - **Aalto University** - Espoo, Finland (Written Evaluation Only) - Ph.D. Pre-Examiner - Jul. 2024
17. Vu Nguyen - **Swiss Federal Institute of Technology - Zurich (ETH Zürich)** - Zurich, Switzerland (Online Oral Defense Attendance) - Master's Degree Co-Advisor and Examiner - May 2024

16. Jeremy Wong - **University of British Columbia** - Vancouver, Canada (Online Oral Defense Attendance) - Master's Degree Examiner - Dec. 2023
15. Seoyeon Yun - **Swiss Federal Institute of Technology - Lausanne (EPFL)** - Lausanne, Switzerland (Externally Funded for In-Person Attendance) - Ph.D. Dissertation Examiner - Sep. 2023
14. Emmanouil Thrampoulidis - **Swiss Federal Institute of Technology - Zurich (ETH Zürich)** - Zurich, Switzerland (Online Oral Defense Attendance) - Ph.D. Dissertation Examiner - Jul. 2023
13. Maíra Afonso de André - **Federal University of Santa Catarina** - Florianopolis, Brazil (Online Oral Defense Attendance) - Ph.D. Qualifying Examiner - Jul. 2021, Ph.D. Dissertation Examiner - Jun. 2023
12. Julien LePrince - **Eindhoven University of Technology (TU Eindhoven)** - Eindhoven, Netherlands (Online Oral Defense Attendance) - Ph.D. Dissertation Examiner - May 2023
11. Kyungmin Lee - **University of Delaware** - Newark, DE, USA (Online Oral Defense Attendance) - Ph.D. Qualifying Examiner - Feb. 2022
10. Benedetto Grillone - **BarcelonaTech (UPC) (Universitat Politècnica de Catalunya)** - Barcelona, Spain (Online Oral Defense Attendance) - Ph.D. Dissertation Examiner - Dec. 2021
9. Till Stoeckman - **Karlsruhe Institute of Technology (KIT)** - Karlsruhe, Germany (Online Oral Defense Attendance) - Master's Degree Co-Advisor and Examiner - Oct. 2021
8. Darryl Fitzgerald - **Murdoch University** - Murdoch, WA, Australia (Written Evaluation Only - No Oral Defense) - Master's Degree Reviewer - May 2021
7. Jonathan Roth - **Stanford University** - Palo Alto, CA, USA (Online Oral Defense Attendance) - Ph.D. Dissertation Examiner - Aug. 2020
6. Marco Savino Piscitelli - **Polytechnic University of Turin (Politecnico di Torino)** - Turin, Italy (Online Oral Defense Attendance) - Ph.D. Dissertation Examiner - Jun. 2020
5. Mauricio Loyola - **Princeton University** - Princeton, NJ, USA (Online Oral Defense Attendance) - Ph.D. Dissertation Examiner - May 2020
4. Eric Teitelbaum - **Princeton University** - Princeton, NJ, USA (Online Oral Defense Attendance) - Ph.D. Dissertation Examiner - May 2020
3. Tao Wang - **University College London** - London, UK (Written Evaluation Only - No Oral Defense) - Master's Degree Co-Supervisor - Jan. 2020
2. Zakia Afroz - **Murdoch University** - Murdoch, WA, Australia (Written Evaluation Only - No Oral Defense) - Ph.D. Dissertation Reviewer - Nov. 2019
1. Cheng Kai Wang - **Delft University of Technology (TU Delft)** - Delft, Netherlands (Online Oral Defense Attendance) - Master's Degree Co-Advisor and Examiner - Oct. 2018

NUS Post-Doctoral Researcher Supervision

9. Dr. Mario Frei - **Dr. sc. ETH Zürich** - Jan. 2021 - Present (Co-supervised with Bon-Gang Hwang and Daniel Wong from NUS in 2021 and with Filip Biljecki in 2022-2024. Now based in the BEARS organization and co-supervised by Stefano Schiavon in 2024 - Present)
8. Dr. Martin Mosteiro Romero - **Dr. sc. ETH Zürich** - Mar. 2021 - Oct. 2023 (Co-supervised with Rudi Stouffs from NUS)
7. Dr. Matias Quintana - **Ph.D. from NUS** - Oct. 2022 - Mar. 2023
6. Dr. Vasantha Ramani - **Ph.D. from NUS** - Jul. 2021 - Dec. 2023 (Based within BEARS SBB2 Lab - Co-supervised with Kameshwar Poolla from UC Berkeley)
5. Dr. Chuan Fu Tan - **Ph.D. from NUS** - Sep. 2021 - Sep. 2022 (Based within the Johnson Controls Open Blue Innovation Center)
4. Dr. Miguel Martin - **Ph.D. from NUS** - Nov. 2020 - Jun. 2022 (Based within BEARS SBB2 Lab - Co-supervised with Kameshwar Poolla from UC Berkeley)
3. Dr. Prageeth Jayathissa - **Dr. sc. ETH Zürich** - Nov. 2018 - Jan. 2020
2. Dr. Pandarasamy Arjunan - **Ph.D. from IIIT Dehli** - Aug. 2018 - Feb. 2020 (Based within BEARS SBB2 Lab - Co-supervised with Kameshwar Poolla from UC Berkeley)
1. Dr. Jayashree Chadawada - **Ph.D. from NUS** - Jan. 2018 - Jun. 2019

NUS Researcher Supervision

6. Yun Xuan Chua - **NUS Research Assistant** - Feb. 2022 - Aug. 2025 (Co-supervised with Daniel Wong from NUS in 2022)
5. Subin Lin - **BEARS SBB2 Research Engineer** - Sep. - Dec. 2022 (Co-supervised with Kameshwar Poola from UC Berkeley)
4. Mahmoud Abdelrahman - **Research Associate and NUS Ph.D. Student** - Jan. 2021 - Mar. 2022
3. Jonathan Roth - **Research Associate and Stanford University Ph.D. Student** - Aug. 2019 - Jun. 2020
2. Tapeesh Sood - **Research Associate** - Sep. 2017 - Jun. 2019
1. Dongkyu Lee - **Research Associate** - Dec. 2017 - Jun. 2018

NUS Visiting Researcher/Fulbright Student Fellow Hosting

14. Xue Cui - Non-graduating NUS Research Exchange and **Hong Kong Polytechnic University Ph.D. Student** - Feb. - Aug. 2025
13. Desai Wang - **Fulbright Scholar to Singapore** - Sep. 2024 - Jun. 2025
12. Synne Krekling Lien - Non-graduating NUS Research Exchange and **Norwegian University of Science and Technology (NTNU) Ph.D. Student** - Sep. 2024 - May. 2025
11. Ben Gottkehas Kamp - Visiting Researcher and **Technical University Munich (TUM) MSc. Student** - Aug. 2023 - Apr. 2024
10. Sailin Zhong - Visiting Researcher and **University of Fribourg Ph.D. Student and MIT Media Lab Researcher** - May - Jul. 2023
9. Kristi Maisha - **Fulbright Scholar to Singapore and Stanford University Ph.D. Student** - Aug. 2022 - Jun. 2023
8. Antonio Liguori - Non-graduating NUS Research Exchange and **RWTH Aachen University Ph.D. Student** - Nov. 2022 - Apr. 2023
7. Dr. Hussain Kazmi - Visiting Research Fellow and **KU Leuven Post-Doctoral Scholar** - Jan. - Mar. 2023
6. Xiaoyu Jin - Non-graduating NUS Research Exchange and **Hong Kong Polytechnic University Ph.D. Student** - Aug. - Dec. 2022
5. Pierre Garreau - Research Intern and **Ecole des Mines de Saint-Étienne MSc. Student** - Mar. - Aug. 2022
4. Filippo Vittori - Non-graduating Research Exchange and **University of Perugia Ph.D. Student** - Mar. - May 2022
3. Julien Leprince - Non-graduating Research Exchange and **Eindhoven University of Technology (TU/e) Ph.D. Student** - Oct. 2021 - Apr. 2022
2. Ananya Joshi - **Fulbright Scholar to Singapore and Carnegie Mellon University Ph.D. Student** - Aug. 2019 - Jun. 2020
1. Anjukan Kathirgamanathan - **Universitas 21 Visiting Ph.D. Student Exchange Student** - Apr. - May 2019

External Service - Professional

NUS University Service

- **Member of the Faculty Promotion and Tenure Committee (FPTC)**, NUS College of Design and Engineering, Jun. 2024 - Jul. 2025
- **Deputy Head of Communication and Engagement**, Department Management Committee (DMC), NUS Department of the Built Environment (DBE), Jul. 2022 - Feb. 2025
- Member of the **NUS Massive Open Online Course (MOOC) Guidance and Development Learning Community** supported by a Teaching Enhancement Grants (TEG), 2020 - 2022
- Dept. of the Built Environment **Internet-of-Buildings (IoB) Platform Leader** for student recruiting and NUS Open Day, 2021

- NUS-wide **Technology-enhanced Learning (TEL) Showcase Symposium** Presenter - Reaching thousands online! Creating an edX massive open online course (MOOC) - Nov. 2020 (Online)
- Volunteer for Advising Educators in NUS in the **Development of edX MOOC Online Courses** - 2020 - 2023
- Leader of the **SDE4 Learning Trail App** Development for the Opening Ceremony attended by Guest-of-Honor DPM Heng Swee Keat, 2019
- **NUS SDE Workshop for Data Analytics Planner** - *A Post-Spreadsheet World: Tools Easing the Learning Curve for Computational Thinking and Data Analytics* - Sep. 2017
- **International Liaison**, NUS Dept. of Building, 2018

Scientific Community Service and Leadership

- Advisory Board - **EU-funded MuSIC Doctoral Network Project - Multi-sensory solutions for increasing human-building resilience in the face of climate change**, 2022 - Present
- Non-quorum Voting Member, **ASHRAE Technical Committee (TC) 4.7 - Energy Calculations**, 2021 - 2025
- Observer (Advisory Role) - **EU-funded ADRENALIN Project - dAta-DRivEN smArT buiLdINgs: Data sandbox, competition, implementation**, 2022 - 2025
- **IEA EBC - Annex 79 - Occupant-Centric Building Design and Operation - Subtask 4 Co-Leader** with Zoltan Nagy and Burak Gunay, 2019 - 2024
- **IEA EBC - Annex 81 - Data-Driven Smart Buildings - Activity D3 Leader** - 2020 - 2024
- Resource Person, **BCA Tripartite Facilities Management Implementation Committee (FMIC) - Integrated Smart FM Taskforce**, 2021 - 2023
- Member of the Performance Advisory Committee, **International Well Buildings Institute (IWBI)**, 2021 - 2022

Editorial Boards and Positions

- **Editorial Board**, **Scientific Data Journal**, 2024 - Present
- **Early Career Editorial Board (ECEB) Member**, **Building and Environment Journal**, 2022 - Present
- **Associate Editor**, **Science and Technology for the Built Environment Journal**, 2023 - 2025
- Guest Editor, **Energy and Buildings Journal**, Digital twin-enabled building operations and control, 2024
- Guest Editor, **Building Simulation Journal**, Data-driven Building Energy Management Technologies that Integrate Physical Knowledge, 2024
- Guest Editor, **Data-Centric Engineering Journal**, Selected papers from the ACM BuildSys 2023 Conference, 2023
- Guest Editor, **Frontiers in Built Environment Journal**, Innovative Human-Centric Investigations and Technologies for Human Wellbeing and Health in the Built Environment, 2020 - 2021
- Guest Editor, **Energies Journal**, Data Modeling, and Analytics Applied to Buildings, 2020 - 2021

Conference Organizational Leadership and Technical/Scientific Committees

- **Local Organizing Committee Member**, **Indoor Air Conference**, Singapore, Jun. 2026 (Currently in Planning Phase)
- **Local Organizing Committee Member and Technical Committee Co-Chair**, **IBPSA ASIM 2026 Conference**, Singapore, Nov. 2026 (Currently in Planning Phase)
- **Track Chair for Resilient Smart Cities – Adapting to Climate Change and Transforming the Urban Application Domain**, **11th IEEE International Smart Cities Conference**, Patras, Greece, Oct. 2025 (Currently in Planning Phase)
- **Association of Computing Machines (ACM) BuildSys - International Conference on Systems for Energy-Efficient Built Environments**
 - ACM BuildSys 2026, **General Chair**, Calgary, Canada, Jun. 2026 (Currently in Planning Phase)
 - **ACM BuildSys 2024**, **Student Travel Grants Chair and Technical Program Committee Member**, Hangzhou, China, Nov. 2024

- [ACM BuildSys 2023](#), **Technical Program Committee Co-Chair**, Istanbul, Turkey, Nov. 2023
- [ACM BuildSys 2022](#), **Workshops Co-Chair and Technical Program Committee Member**, Boston, USA, Nov. 2022
- [ACM BuildSys 2021](#), **Publicity Co-Chair and Technical Program Committee Member**, Coimbra, Portugal, Nov. 2021
- [ACM BuildSys 2020](#), **Technical Program Committee Member**, Yokohama, Japan (Online), Nov. 2020
- [ACM BuildSys 2019](#), **Publicity Co-Chair and Technical Program Committee Member**, New York, NY, USA, Nov. 2019
- [ACM BuildSys 2018](#), **Poster and Demo Chair and Technical Program Committee Member**, Shenzhen, China, Nov. 2018
- **ACM e-Energy - International Conference on Future Energy Systems and AMLIES - an e-Energy International Workshop on Applied Machine Learning for Intelligent Energy Systems**
 - [ACM e-Energy 2025](#), **Technical Program Committee Member**, Rotterdam, NL, Jun. 2025
 - [ACM e-Energy 2024](#), **Workshops Co-Chair and Technical Program Committee Member**, Singapore, Jun. 2024
 - [ACM SAFE-Energy e-Energy Workshop 2024](#), **Workshop Co-Chair and Technical Program Committee Member**, Singapore, Jun. 2024
 - [ACM AMLIES 2021](#), **Technical Program Committee Member**, Torino, Italy, Jun. 2021
 - [ACM AMLIES 2020](#), **Technical Program Committee Member**, Melbourne, Australia (Online), Jun. 2020
 - [ACM e-Energy 2020](#), **Technical Program Committee Member**, Melbourne, Australia (Online), Jun. 2020
 - [ACM AMLIES 2019](#), **Technical Program Committee Member**, Phoenix, AZ, USA, Jun. 2019
- **ACM DATA - BuildSys/Sensys Workshop on Data: Acquisition to Analysis Conference and Workshops**
 - [ACM DATA 2022](#), **Technical Program Committee Member**, Boston, MA, USA, Nov. 2022
 - [ACM DATA 2021](#), **Technical Program Committee Member**, Coimbra, Portugal (Hybrid), Nov. 2021
 - [ACM DATA 2020](#), **Technical Program Committee Member**, Yokohama, Japan (Online), Nov. 2020
 - [ACM DATA 2019](#), **Technical Program Committee Member**, New York, NY, USA, Nov. 2019
- **Lead Organizer**, [9th Expert Meeting of the Annex 79 and OB-22 Symposium](#), Singapore, Sep. 2022
- **Scientific Committee Member**, [18th Healthy Buildings Europe 2023 Conference](#), Aachen, Germany, Jun. 2023
- **ACM BALANCES - BuildSys International Workshop on Big Data and Machine Learning for Smart Buildings and Cities**
 - [ACM BALANCES 2022](#), **Technical Program Committee Member**, Boston, MA, USA, Nov. 2022
 - [ACM BALANCES 2021](#), **Technical Program Committee Member**, Coimbra, Portugal (Hybrid), Nov. 2021
- **Reviewer**, [ACADIA 2022, Association for Computer Aided Design in Architecture Conference](#), Hybrids & Haecceities, Philadelphia, USA, Oct. 2022
- **Technical Program Committee Member**, [ISC2 2022, 8th IEEE International Smart Cities Conference](#), Paphos, Cyprus, Sep. 2022
- **Symposium on Simulation for Architecture and Urban Design (SimAUD) Conference**
 - [SimAUD 2021](#), **Scientific Committee Member**, Online, Apr. 2021
 - [SimAUD 2020](#), **Scientific Committee Member**, Online, May 2020
 - [SimAUD 2019](#), **Scientific Committee Member**, Atlanta, GA, USA, Apr. 2019

- [SimAUD 2018](#), Scientific Committee Member, Delft, Netherlands, Jun. 2018
- **International Building Performance Simulation Association (IBPSA) Building Simulation Conferences**
 - [Building Simulation 2021 \(BS2021\) International IBPSA Conference](#), Scientific Committee Member, Bruges, Belgium, Sep. 2021
 - [eSIM 2020/21 IBPSA-Canada Regional Conference](#), Scientific Committee Member, Online, Jun. 2021
 - [Building Simulation 2019 \(BS2019\) International IBPSA Conference](#), Scientific Committee Member, Rome, Italy, Sep. 2019
 - [AIRAH and IBPSA's Australasian Building Simulation 2017 Conference](#), Scientific Committee Member, Melbourne, November 15-16, 2017
- **Technical Program Committee Member**, [IEEE ICPADS 2019, International Conference on Parallel and Distributed Systems](#), Mobile and Ubiquitous Computing Track, Tianjin, China, Dec. 2019
- **Reviewer**, [I3CE 2019, International Conference on Computing in Civil Engineering](#), Atlanta, USA, Jun. 2019

Journal Peer Reviewer

Publication Peer Reviewer for **Energy and Buildings** (42 papers), **Building and Environment** (11), **Applied Energy** (6), **Journal of Building Performance Simulation** (5), **ACM Transactions on Internet-of-Things** (4), **Building Simulation** (4), **Science and Technology for the Built Environment** (4), **Advances in Applied Energy** (3), **Automation in Construction** (3), **Journal of Building Energy** (3), **Energy and Built Environment** (2), **Energy Efficiency** (2), **International Journal of Human-Computer Interaction** (2), **Solar Energy** (2), **PLOS One** (2), **Frontiers in Built Environment** (1), **Applied Sciences** (1), **Architectural Science Review** (1), **Proceedings of the Institution of Civil Engineers** (1), **Advanced Energy Informatics** (1), **Data-Centric Engineering** (1), **Sustainability** (1), **Sustainable Cities and Society** (1), **Developments in the Built Environment** (1), **Energy & Environment** (1), **Energy** (1), **Scientific Data** (1), **Scientific Reports** (1), **Sustainable and Resilient Infrastructure** (1) – (Updated in Jul. 2024)

Internal/External Grant Reviewer

- Grants & Fellowships Call 2025, **Fund for Scientific Research-FNRS**, Belgium, 2025
- ENAC Fribourg Grants 2024, **Swiss Federal Institute of Technology - Lausanne (EPFL)**, 2024
- Ministry of Education, Tier 1 Grant, **NUS College of Design and Engineering**, 2024
- Leading House Asia Grant, **Swiss Federal Institute of Technology - Zurich (ETH Zurich)**, 2023
- Research Grants Council Funding, **Research Grants Council (RGC) of Hong Kong SAR**, 2023
- New Frontiers in Research Fund, **Natural Sciences and Engineering Research Council of Canada (NSERC)**, 2022
- Discovery Grant Program, **Natural Sciences and Engineering Research Council of Canada (NSERC)**, 2019
- Collaborative Research and Development Grant, **Natural Sciences and Engineering Research Council of Canada (NSERC)**, 2019
- Open Technology Program, **Netherlands Organisation for Scientific Research (NWO)**, 2018
- Funding Program Application, **Ng Teng Fong Charitable Foundation (NTFCF) Research Funding**, 2018

Professional Service and Leadership

- [American Society of Heating, Refrigerating, and Air-Conditioning Engineers \(ASHRAE\)](#)
Associate Member, 2007 - 2012, 2017 - Present
ASHRAE NUS Student Chapter Co-Founder, 2010, and Advisor, 2018 - 2025
Student Member, 2004 - 2007, 2012 - 2017
[Singapore Chapter](#) Board of Governors Member and Student Activities Chair, 2011 - 2013

- **International Building Performance Simulation Association (IBPSA)**
IBPSA Singapore Chapter, Founding Member (of chapter refounding in 2018) and Electronic Communications Chair 2018 - Present, Member, 2007 - Present
Co-Founder of the first iteration of the Singapore Chapter, 2012 - 2014
- **Fulbright Association (Singapore)**
Webmaster, 2013 - Present
Executive Committee Member, 2012 - 2013
- **ETH Zurich Singapore Alumni Chapter**
Member, 2019 - Present, Chapter Board Member or Treasurer, 2020 - 2022
- **Association for Computing Machinery (ACM)**
Student Member or Member, 2013 - Present (intermittently)
- **U.S. Green Building Council (USGBC) Nebraska Flatwater Chapter**
Board of Directors, 2008 - 2009
- **Society of American Military Engineers (SAME)**
Member, May 2007 - 2010
Student Member, 2005 - 2007
Student Chapter President, 2005 - 2006
- **Architectural Engineering Institute (AEI)**
Student Member, 2005 - 2007

Professional Registrations

- **Singapore Certified Energy Manager (SCEM)** - Jul. 2014
- **Singapore Building and Construction Authority (BCA) Certificate on Measurement and Verification of Chilled Water Plant Efficiency** - Sep. 2011
- **Mechanical Engineer-In-Training (EIT)** in the State of Nebraska, USA (No. E-8582) - May 2007
- **LEED Accredited Professional (LEED AP)** by the U.S. Green Building Council (USGBC) - 2007