Dr. Mahmoud Abdelrahman

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List of Publications

885	15	17	18
Total Citations	h-index	i10-index	Publications

A. Refereed Journal Articles (12)

[1] **Abdelrahman, M.**, Macatulad, E., Lei, B., Quintana, M., Miller, C., & Biljecki, F. (2025). What is a digital twin anyway? Deriving the definition for the built environment from over 15,000 scientific publications. *Building and Environment*, 112748. https://doi.org/10.1016/j.buildenv.2025.112748

[2] Quintana, M., Gu, Y., Liang, X., Hou, Y., Ito, K., Zhu, Y., **Abdelrahman, M.**, & Biljecki, F. (2025). Global urban visual perception varies across demographics and personalities. *Nature Cities*. https://doi.org/10.1038/s44284-025-00330-x

[3] Quintana, M., Liu, F., Torkko, J., Gu, Y., Liang, X., Hou, Y., Ito, K., Zhu, Y., **Abdelrahman, M.**, & Biljecki, F. (2026). It is not always greener on the other side: Greenery perception across demographics and personalities in multiple cities. *Landscape and Urban Planning*, 105618. https://doi.org/10.1016/j.landurbplan.2026.105618

[4] Ito, K., Zhu, Y., **Abdelrahman, M.**, Quintana, M., Hou, Y., Liang, X., Gu, Y., & Biljecki, F. (2025). ZenSVI: An open-source software for the integrated acquisition, processing and analysis of street view imagery towards scalable urban science. *Computers, Environment and Urban Systems*, 102283. https://doi.org/10.1016/j.compenvurbsys.2025.102283

[5] **Abdelrahman, M.**, Chong, A., & Miller, C. (2022). Personal thermal comfort models using digital twins: Preference prediction with BIM-extracted spatial-temporal proximity data from Build2Vec. *Building and Environment*, 208, 108532. https://doi.org/10.1016/j.buildenv.2021.108532

[6] **Abdelrahman, M.**, & Miller, C. (2022). Targeting occupant feedback using digital twins: Adaptive spatial-temporal thermal preference sampling to optimize personal comfort models. *Building and Environment*, 218, 109090. https://doi.org/10.1016/j.buildenv.2022.109090

[7] **Abdelrahman, M.**, Zhan, S., Miller, C., & Chong, A. (2021). Data science for building energy efficiency: A comprehensive text-mining driven review of scientific literature. *Energy and Buildings*, 247, 110885. https://doi.org/10.1016/j.enbuild.2021.110885

[8] Jayathissa, P., Quintana, M., **Abdelrahman, M.**, & Miller, C. (2020). Humans-as-a-sensor for buildings: Intensive longitudinal indoor comfort models. *Buildings*, 10(10), 174. https://doi.org/10.3390/buildings10100174

[9] Tartarini, F., Schiavon, S., Quintana, M., **Abdelrahman, M.**, Kim, J., & Miller, C. (2022). Personal comfort models based on wearable and environmental data. *Indoor Air*, 32(10), e13160. https://doi.org/10.1111/ina.13160

[10] Tarabieh, K., Nassar, K., **Abdelrahman, M.**, & Mashaly, I. (2019). Statics of space syntax: Analysis of daylighting. *Frontiers of Architectural Research*, 8(3), 364-376. https://doi.org/10.1016/j.foar.2019.05.004

[11] **Abdelrahman, M.**, Moustafa, W. S., & Farag, O. M. (2017). Modelling of Egyptian low-cost-housing natural ventilation: Integration of geometry, orientation and street width optimization. *Urban Climate*, 22, 124-141. https://doi.org/10.1016/j.uclim.2017.08.002

[12] Moustafa, W. S., **Abdelrahman, M.**, & Hegazy, I. R. (2017). Building performance assessment of user behaviour as a post occupancy evaluation indicator: Case study on youth housing in Egypt. *Building Simulation*, 10(6), 835-847. https://doi.org/10.1007/s12273-017-0395-7

B. Peer-Reviewed Conference Proceedings (5)

[13] Miller, C., **Abdelrahman, M.**, Chong, A., Biljecki, F., Quintana, M., Frei, M., Romanello, L., & Chew, M. Y. L. (2021). The Internet-of-Buildings (IoB): Digital twin convergence of wearable and IoT data with GIS/BIM. *Journal of Physics: Conference Series*, 2042(1), 012041. https://doi.org/10.1088/1742-6596/2042/1/012041

[14] Sood, T., Quintana, M., Jayathissa, P., **Abdelrahman, M.**, & Miller, C. (2019). The SDE4 learning trail: Crowdsourcing occupant comfort feedback at a net-zero energy building. *Journal of Physics: Conference Series*, 1343(1), 012141. https://doi.org/10.1088/1742-6596/1343/1/012141

[15] Quintana, M., **Abdelrahman, M.**, Frei, M., Tartarini, F., & Miller, C. (2021). Longitudinal personal thermal comfort preference data in the wild. *Proceedings of the 19th ACM Conference on Embedded Networked Sensor Systems (SenSys)*, pp. 406-412. https://doi.org/10.1145/3485730.3493693

[16] **Abdelrahman, M.**, Chong, A., & Miller, C. (2020). Build2Vec: Building representation in vector space. *Proceedings of the Symposium on Simulation for Architecture and Urban Design (SimAUD)*. https://doi.org/10.5555/3465085.3465155

[17] **Abdelrahman, M.**, Zhan, S., & Chong, A. (2020). A three-tier architecture visual-programming platform for building-lifecycle data management. *Proceedings of the Symposium on Simulation for Architecture and Urban Design (SimAUD)*. https://doi.org/10.5555/3465085.3465127

C. Preprints (1)

[18] Miller, C., Christensen, R., Leong, J. K., **Abdelrahman, M.**, Tartarini, F., Quintana, M., & Chew, M. Y. L. (2022). Smartwatch-based ecological momentary assessments for occupant wellness and privacy in buildings. *arXiv preprint*. https://doi.org/10.48550/arXiv.2208.06080

D. Software & Invention Disclosures (1)

[S1] **Abdelrahman, M.** (2021). *SpaceBrain: Graph neural network platform for spatial indoor environmental quality prediction.* Software Invention Disclosure, National University of Singapore. Ref. 2021-140.

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Full publication record: scholar.google.com/citations?user=WXutEXEAAAAJ