

PUBLICATIONS

**Journal publications:**

**Suel, E.**, Muller, E., Bennett, J.E., Blakely, T., Lynch, J., Mackenback, J., Midden, A., Mizdrak, A., Nathwani, R., Wagtendonk, A., Brauer, M., Ezzati, M., 2023., *Do poverty and wealth look the same the world over? A comparative study of 12 cities from five high-income countries*. EPJ Data Science, 12(1), 19.

Nathvani, R., Vishwanath, D., Clark, S.N., Alli, A.S., Muller, E., Coste, H., Bennett, J.E., Nimo, J., Moses, J.B., Baah, S. and Hughes, A., **Suel, E.**, Metzler, A.B., Rashid, T., Bauer, M., Baumgartner, J., Owusu, G., Agyei-Mensah, S., Arku, R.E., Ezzati, M. 2023. *Beyond here and now: Evaluating pollution estimation across space and time from street view images with deep learning*. Science of The Total Environment, p.166168.

Wiedemann, N., Martin, H., **Suel, E.**, Hong, Y., Xin, Y. 2023. *Influence of tracking duration on the privacy of individual mobility graphs*. Journal of Location Based Services, 1-19.

Bennett, J., Rashid, T., Zolfaghari, A., Doyle, Y., **Suel, E.**, Pearson-Stuttard, J., Davies, B., Fecht, D., Muller, E., Nathvani, R., Daby, H.I., Johnson, E., Li, G., Flaxman, S., Asaria, M., Ezzati, M., 2023. *Changes in life expectancy and house prices in London from 2002 to 2019: hyper-resolution spatiotemporal analysis of death registration and real estate data..* The Lancet Regional Health–Europe, 27.

**Suel, E.**, Sorek-Hamer, M., Moize, I., von Pohle, M., Sahasrabhojane, A., Asanjan, A.A, Arku, R., Benjamin, B., Middel, A., Deardorff, E., Lingenfelter, V., Oza, N., Ezzati, M., Brauer, M., 2022., *What you see is what you breathe? Estimating air pollution spatial variation using street-level imagery*. Remote Sensing, 14(14), 3429.

Nathvani, R., Clark, S.N., Muller, E., Alli, A.S., Bennett, J.E., Nimo, J., Moses, J.B., Solomon, B., Metzler, A.B., Brauer, M., **Suel, E.**, Huges, A., Rashid, T., Gemmel, E., Moulds, S., Baumgartner, J., Toledano, M., Agyemang, E., Owusul, G., Agyei-Mensah, S., Arku, R.E., Ezzati, M., 2022. *Characterisation of urban environment and activity across space and time using street images and deep learning in Accra*. Scientific Reports 12, 20470.

Pescador Jimenez, M., **Suel, E.**, Rifas-Shiman, S.L., Hydstad, P., Larkin, A., Hankey, S., Just, Allan C., Redline, S., Oken, E., James, P., 2022. *Street-view greenspace exposure and objective sleep characteristics among children* Environmental Research, 214, 113744.

Sorek-Hamer, M., von Pohle, M., Sarasrabhojane, A., Asanjan, A.A., **Suel, E.**, Deardorff, E., Lingenfelter, V., Oza, N., Ezzati, M., Brauer, M., 2022. *A Deep Learning Approach for Meter-Scale Air Quality Estimation in Urban Environments Using Very High-Spatial-Resolution Satellite Imagery*. Atmosphere, 13(5), 696.

**Suel, E.**, Bhatt, S., Flaxman, S., Brauer, M., Ezzati, M., 2021. *Multimodal deep learning from satellite and street-level imagery for measuring income, overcrowding, and environmental deprivation in urban areas*. Remote Sensing of Environment 257, 112339.

**Suel, E.**, Polak, J.W., Bennett J.E., Ezzati, M., 2019. *Measuring social, environmental and health inequalities using deep learning and street imagery*. Scientific reports 9, 6229.

Yazdi, M.D, Kuang, Z., Dimakopoulou K., Barratt, B., **Suel, E.**, Amini H., Lyapustin. A., Coull, B., Katsouyani, K., Schwartz, J., 2020. *Predicting Fine Particulate Matter (PM<sub>2.5</sub>) in the Greater London Area: An Ensemble Approach using Machine Learning Methods*, Remote Sensing 12.6:914.

**Suel, E.**, Polak, J.W., 2018. *Incorporating online shopping into travel demand modelling: challenges, progress, and opportunities*. Transport Reviews, 1-26.

**Suel, E.**, Polak, J.W., 2018, *Development of joint models for channel, store, and travel mode choice: grocery shopping in London.*, Transportation Research Part A: Policy and Practice, 99, pp.147-162.

**Suel, E.**, Daina, N., Polak, J.W., 2018. *A hazard-based approach to modelling effects of online shopping on intershopping duration.*, Transportation, pp. 1-14

**Suel, E.**, Le Vine S., Polak J.W., 2015, *Empirical Application of Expenditure Diary Instrument*

*to Quantify Relationships Between In-Store and Online Grocery Shopping Case Study of Greater London.*, Transportation Research Record, ISSN:0361-1981, pp:45-54

#### **Submitted manuscripts and pre-prints:**

Statler, S., Volpi, M., Buttner, N., Law, S., Harttgen, K., **Suel, E.**, 2023. *Self-supervised learning unveils change in urban housing from street-level images*. arXiv preprint arXiv:2309.11354. Under Review.

**Suel, E.**, Wiedemann, N., Nespoli, L., Medici, V., Danalet, A., Raubal, M., 2023. *Vehicle-to-grid and car sharing: Willingness for flexibility in reservation times in Switzerland*. Under Review.

Nespoli, L., Wiedemann, N., **Suel, E.**, Xin, Y., Raubal, M. and Medici, V., 2022. *National-scale bi-directional EV fleet control for ancillary service provision*. arXiv preprint arXiv:2210.07756. Under Review.

Yadav, N., Sorek-Hamer, M., Von Pohle, M., Asanjan, A.A., Sahasrabhojane, A., **Suel, E.**, Arku, R., Lingenfelter, V., Brauer, M., Ezzati, M. and Oza, N., 2022. Deep Transfer Learning on Satellite Imagery Improves Air Quality Estimates in Developing Nations. arXiv preprint arXiv:2202.08890. Under Review.

Li, Y., Zhang, Y., **Suel, E.**, Long, Y., Robinson, B.E., Cavanaugh, A.C., Ezzati, M., 2022. *Measuring Beijing Neighborhoods Socioeconomic Status from Sky and Street*. Under Review.

#### **Conference proceedings:**

Nie, Y., **Suel, E.** 2023. *Disparities in London's Public Transport Accessibility over a Decade: Impact of Race, Ethnicity, and Socioeconomic Status*. Equitable Accessibility and Sustainable Mobility Workshop 2023 at The 12th International Conference on Geographic Information Science (GIScience), Leeds, UK, 12-15 September 2023.

James, P., **Suel, E.**, Rifas-Shiman, S., Hystad, P., Larkin, A., Hankey, S., Just, A., Hivert, M.F., Oken, E. and Jimenez, M., 2022, September. Street-View Greenspace Exposure and Measured Adiposity in Early Adolescence. In ISEE Conference Abstracts (Vol. 2022, No. 1).

Lin, P.I.D., Jimenez, M., **Suel, E.**, Rifas-Shiman, S., Hystad, P., Larkin, A., Hankey, S., Just, A., Hivert, M.F., Oken, E. and James, P., 2022, September. Street-View Greenspace Exposure and Childhood Asthma-Related Outcomes: Analyses in Project Viva. In ISEE Conference Abstracts (Vol. 2022, No. 1).

Casacuberta, S., **Suel, E.**, Flaxman, S. 2021. *PCACE: A Statistical Approach to Ranking Neurons for CNN Interpretability*. Responsible AI and DeepSpatial workshops at KDD 2021, Virtual, 14-18 August 2021.

Tasioulis, T., Bhalla, K., **Suel, E.**, Nathvani, R., Ezzati, M. 2021. *Walking safety: Measuring objective safety in the greater London area*. 17th International Conference on Urban Health, Virtual, 6-8 July 2021.

James, P., **Suel, E.**, Rifas-Shiman S. L., Hystad, P., Larkin, A., Hankey, S., Just, A. C., Hivert, M. F., Oken, E., Jimenez M. P., 2021. *Street-View Greenspace Exposure and Objective Daily Rest-Activity Patterns.*, 33rd Annual Conference of the International Society for Environmental Epidemiology (ISEE 2021), New York, USA. August 2021.

Jimenez M. P., **Suel, E.**, Rifas-Shiman S. L., Hystad, P., Larkin, A., Hankey, S., Just, A. C., Oken, E., James, P., 2021. *Street-View Greenspace Exposure and Objective Sleep Characteristics.*, 33rd Annual Conference of the International Society for Environmental Epidemiology (ISEE 2021), New York, USA. August 2021.

**Suel, E.**, Sorek-Hamer, M., Moise, I., von Pohle, M., Sahasrabhojane, A., Asanjan, A., Deardorff, E., Lingenfelter, V., Oza, N., Ezzati, M., Brauer, M., 2020. *Predicting air pollution spatial variation with street-level imagery.*, Machine Learning in Public Health (MLPH) Workshop, 34th Conference

on Neural Information Processing Systems (NeurIPS 2020), Virtual. December 2020.

**Suel, E.**, Sorek-Hamer, M., Moise, I., von Pohle, M., Sahasrabhojane, A., Asanjan, A., Deardorff, E., Lingenfelter, V., Oza, N., Ezzati, M., Brauer, M., 2020. *Predicting air pollution spatial variation with street-level imagery.*, Machine Learning in Public Health (MLPH) Workshop, 34th Conference on Neural Information Processing Systems (NeurIPS 2020), Virtual. December 2020.

von Pohle, M., Sahasrabhojane, A., Akbari Asanjan, A., Deardorff, E., Lingenfelter, V., Sorek-Hamer, M., **Suel, E.**, Matthews, B., Oza, N. and Brauer, M., 2020, December. *Air Quality Modeling for Urban Environments Using Deep Neural Networks and Very High-Resolution Satellite Imagery.* In AGU Fall Meeting. 2020.

**Suel, E.**, Bouleau, M., Ezzati, M., Flaxman S., 2018. *Combining street imagery and spatial information for measuring socioeconomic status.*, Workshop on Modeling and Decision-Making in the Spatiotemporal Domain, 32nd Conference on Neural Information Processing Systems (NeurIPS 2018), Montréal, Canada. December 2018.

Martin, H., Bucher, D., **Suel, E.**, Zhao, P., Perez-Cruz, F., Raubal, M., 2018. *Graph Convolutional Neural Networks for Human Activity Purpose Imputation from GPS-based Trajectory Data.*, Workshop on Modeling and Decision-Making in the Spatiotemporal Domain, 32nd Conference on Neural Information Processing Systems (NeurIPS 2018), Montréal, Canada. December 2018.

**Suel, E.**, Polak, J.W. 2017. *Non-parametric permutation tests for hypothesis testing in discrete choice models* 5th International Choice Modelling Conference, Cape Town, South Africa. April 2017.

Daina, N., **Suel, E.**, Latinopoulos, C., Polak, J., *Challenges in online updating of individual choice models for recommender systems or autonomous decision agents* 5th International Choice Modelling Conference, Cape Town, South Africa. April 2017.

**Suel, E.**, Polak, J.W. 2016. *Identification of parameters in nested logit models with limited data: A Monte Carlo simulation study.* 5th hEART symposium of European Association for Research in Transportation. Delft University of Technology, Netherlands. September 2016.

Tolouei, R., **Suel, E.**, Triampela, M., Le Vine, S., Polak, J.W., Hanson, P., Kucharski, P. 2016. *Longitudinal analysis of trip rates in Britain: partial effects of migration, technology, and housing costs.* 44th European Transport Conference, Barcelona, Spain. October 2016.

**Suel, E.**, Zolfaghari, A., Polak, J. 2016. *A joint model of channel and store choice: grocery shopping in London.* 95th Annual meeting of the Transportation Research Board, Washington DC, USA. January 2016.

**Suel, E.**, Tolouei, R., Le Vine, S., Hanson, P., Feeney, A., Polak, J. 2016. *Quantifying the effects of residential property markets and international migration on trip rates in Britain.* 95th Annual meeting of the Transportation Research Board, Washington DC, USA. January 2016.

**Suel, E.**, Daina, N., Polak, J. 2016. *A hazard-based approach to modelling effects of online shopping on intershopping duration.* 48th Annual Universities Transport Study Group Conference, University of Bristol, UK. January 2016.

**Suel, E.**, Zolfaghari, A., Polak, J. 2015. *Mobility behaviour in multi-channel retail environments: joint model of shopping channel, destination, and mode choice.* 4th hEART symposium of European Association for Research in Transportation, Technical University of Denmark Copenhagen, Denmark. September 2015.

**Suel, E.**, Le Vine S, Polak J, 2015. *Empirical Application of Expenditure Diary Instrument to Quantify Relationships Between In-Store and Online Grocery Shopping Case Study of Greater London.*, 94th Annual meeting of the Transportation Research Board, Washington DC, USA. January 2015.

**Suel, E.**, Zolfaghari, A., Polak, J. 2015. *Mobility impacts of multi-channel retailing: joint model of shopping channel and destination choice.* 47th Annual Universities Transport Study Group Confer-

ence, City University London, UK. January 2015.

Chen, Q., Le Vine, S., **Suel, E.**, Polak, J. 2015. *A panel-data analysis of the observed decline in car access among young adults in Britain*. 47th Annual Universities Transport Study Group Conference, City University London, UK. January 2015.

#### DATABASES

**Suel, E.**, Pescador Jimenez, M., James, P. (2020). CRESSH Built Environment Deep Learning Algorithms for Massachusetts Study [data file]. Available from: <https://sites.sph.harvard.edu/cressh/>

#### NON-PEER- REVIEWED PUBLICATIONS

Polak, J., Keirstead, J., **Suel, E.** 2014. *Connecting Research with Cities: Mapping the UK's research landscape on urban systems and technologies*. Future Cities Catapult, London.

Ararat, M., **Suel, E.**, Yurtoglu, B., Sustainable Investment in Turkey: The Case in Context - An Update (May 2014). Available at SSRN: <https://ssrn.com/abstract=2447937>

Ararat, M., **Suel, E.**, The State of Sustainable Investment in Key Emerging Markets (May 11, 2011). Available at SSRN: <https://ssrn.com/abstract=1989869>

Ararat, M., Yurtoglu, B., **Suel, E.** and Tura, D., Sustainable Investment in Turkey 2010 (January 2011). Available at SSRN: <https://ssrn.com/abstract=1989866>