Michael Szell

Associate Professor · Computer Science Department · IT University of Copenhagen

Publications

- 51. C.M. Büth, A. Vybornova, M. Szell superblockify: A Python Package for Automated Generation, Visualization, and Analysis of Potential Superblocks in Cities, arXiv:2404.15062 (2024, submitted)
- 50. L.M. Aiello, A. Vybornova, S. Juhász, M. Szell, E. Bokányi **Urban highways are barriers to social ties**, *arXiv*:2404.11596 (2024, submitted)
- 49. M. Coscia, C. Borgelt, M. Szell Fast Multiplex Graph Association Rules for Link Prediction, arXiv:2211.12094 (2022, submitted)
- 48. L. Alessandretti, M. Szell **Urban Mobility**, *Compendium of Urban Complexity*, *arXiv*:2211.00355, (2022, submitted)
- 47. A. Rahbek Vierø, A. Vybornova, M. Szell **How Good Is Open Bicycle Network Data? A Countrywide Case Study of Denmark**, Geographical Analysis (2024, in print)
- 46. D. Rhoads, C. Rames, A. Solé-Ribalta, M.C. González, M. Szell, J. Borge-Holthoefer **Sidewalk networks: Review and outlook**, *Computers, Environment and Urban Systems* 106, 102031 (2023)
- 45. A. Rahbek Vierø, A. Vybornova, M. Szell **BikeDNA: A Tool for Bicycle Infrastructure Data & Network Assessment**, Environment and Planning B 51(2), 512–528 (2024)
- 44. A. Battiston, L. Napoli, P. Bajardi, A. Panisson, A. Perotti, M. Szell, R. Schifanella Revealing the determinants of gender inequality in urban cycling with large-scale data, EPJ Data Science 12, 9 (2023)
- 43. S.M. Breum, B. Kostic, M. Szell

 Computational Desire Line Analysis of Cyclists on the Dybbølsbro Intersection in Copenhagen,

 Transport Findings 56683 (2022)
- 42. P. Folco, L. Gauvin, M. Tizzoni, M. Szell **Data-driven micromobility network planning for demand and safety**, *Environment and Planning B* 50(8), 2087–2102 (2023)
- 41. L. Alessandretti, L.G. Natera Oroczo, M. Saberi, M. Szell, F. Battiston

 Multimodal urban mobility and multilayer transport networks, Environment and Planning B 50(8), 2038–2070 (2023)
- 40. M. Klanjčić, L. Gauvin, M. Tizzoni, M. Szell **Identifying urban features for vulnerable road user safety in Europe**, EPJ Data Science 11, 27 (2022)
- 39. M. Szell, S. Mimar, T. Perlman, G. Ghoshal, R. Sinatra **Growing urban bicycle networks**, *Scientific Reports* 12, 6765 (2022)
- 38. A. Vybornova, T. Cunha, A. Gühnemann, M. Szell **Automated Detection of Missing Links in Bicycle Networks**, *Geographical Analysis* 55(2), 239–267 (2023)
- 37. M. Coscia, M. Szell

 Multiplex Graph Association Rules for Link Prediction, Proceedings of the International Conference on Web and Social Media (ICWSM) 15(1), 129–139 (2021)

36. M. Schläpfer, L. Dong, K. O'Keeffe, P. Santi, M. Szell, H. Salat, S. Anklesaria, M. Vazifeh, C. Ratti, G.B. West

The universal visitation law of human mobility, Nature 593(7860), 522-527 (2021)

- 35. L.G. Natera Orozco, F. Battiston, G. Iñiguez, M. Szell

 Data-driven strategies for optimal bicycle network growth, Royal Society Open Science 7:201130 (2020)
- 34. L.G. Natera Orozco, F. Battiston, G. Iñiguez, M. Szell

 Extracting the multimodal fingerprint of urban transportation networks, Transport Findings 13171
 (2020)
- 33. F. Battiston, F. Musciotto, D. Wang, A.-L. Barabási, M. Szell, R. Sinatra **Taking census of physics**, *Nature Reviews Physics* 1, 89–97 (2019)
- 32. B. Resch, M. Szell

 Human-Centric Data Science for Urban Studies, ISPRS International Journal of Geo-Information 8, 584
 (2019)
- 31. M. Szell, Y. Ma, R. Sinatra A Nobel opportunity for interdisciplinarity, *Nature Physics* 14, 1075–1078 (2018)
- 30. M. Szell

 Crowdsourced quantification and visualization of urban mobility space inequality, *Urban Planning* 3, 1-20 (2018)
- 29. S. Grauwin, M. Szell, S. Sobolevsky, P. Hövel, F. Simini, M. Vanhoof, Z. Smoreda, A.-L. Barabási, C. Ratti **Identifying the structural discontinuities of human interactions**, *Scientific Reports* 7, 46677 (2017)
- 28. Y. Holovatch, O. Mryglod, M. Szell, S. Thurner **Analyses of a virtual world**, In: *Math Meets Myth: Complexity-science approaches to folktales, myths, sagas, and histories*, Springer, Eds.: R. Kenna, M. Maccarron, P. Maccarron (2017)
- 27. R. Tachet , O. Sagarra , P. Santi, G. Resta , M. Szell , S. Strogatz , C. Ratti Scaling law of urban ride sharing, *Scientific Reports* 7, 42868 (2017)
- 26. M. Nyhan, S. Sobolevsky, C. Kang, P. Robinson, A. Corti, M. Szell, D. Streets, Z. Lu, R. Britter, S.R.H. Barrett, C. Ratti

 Predicting vehicular emissions in high spatial resolution using pervasively measured transportation data and microscopic emissions model, *Atmospheric Environment* 140, 352–363 (2016)
- 25. R. Sinatra, P. Deville, M. Szell, D. Wang, A.-L. Barabási A century of physics, *Nature Physics* 11, 791–796 (2015)
- 24. O. Sagarra, M. Szell, P. Santi, A. Diaz-Guilera, C. Ratti Supersampling and network reconstruction of urban mobility, *PLOS ONE* 10(8), e0134508 (2015)
- 23. M. Szell, P. Santi, C. Ratti **Trip sharing in the era of self-driving cars**, *Autonomous Vehicles Conference*, New York University (2015)
- 22. M. Szell, R. Sinatra

 Research funding goes to rich clubs, Proceedings of the National Academy of Sciences 112(48), 14749–14750 (2015)
- 21. O. Mryglod, B. Fuchs, M. Szell, Y. Holovatch, S. Thurner Interevent time distributions of human multi-level activity in a virtual world, *Physica A* 419, 681–690 (2014)
- 20. P. Santi, G. Resta, M. Szell, S. Sobolevsky, S. Strogatz, C. Ratti Quantifying the benefits of vehicle pooling with shareability networks, *Proceedings of the National Academy of Sciences* 110(37), 13290–13294 (2014)

- M. Szell, S. Grauwin, C. Ratti
 Contraction of online response to major events, PLOS ONE 9(2), e89052, (2014)
- 18. P. Santi, G. Resta, M. Szell, S. Sobolevsky, S. Strogatz, C. Ratti Reply to Lopez et al.: Sustainable implementation of taxi sharing requires understanding systemic effects, Proceedings of the National Academy of Sciences 111(51), E5489 (2014)
- 17. M. Szell, B. Groß

Hubcab – Exploring the Benefits of Shared Taxi Services, *Decoding the City*, De Gruyter, Eds.: D. Offenhuber, C. Ratti (2014)

16. M. Szell

Connecting Paradigms, Science 343(6147), 970–971 (2014)

15. R. Sinatra, M. Szell

Entropy and the predictability of online life, Entropy 16(1), 543-556 (2014)

- S. Sobolevsky, M. Szell, R. Campari, T. Couronné, Z. Smoreda, C. Ratti
 Delineating geographical regions with networks of human interactions in an extensive set of countries, PLOS ONE 8(12), e81707 (2013)
- 13. M. Szell, B. Groß

Hubcab – Taxi-Fahrgemeinschaften, digital erkundet, *Stadt entschlüsseln*, Bauwelt Fundamente 150, Birkhäuser, Eds.: D. Offenhuber, C. Ratti (2013)

- 12. S. Thurner, P. Klimek, M. Szell, G. Duftschmid, G. Endel, A. Kautzky-Willer, D. Kasper Reply to Klitz and Niklasson: Can viral infections explain the cross-sectional Austrian diabetes data?, *Proceedings of the National Academy of Sciences* 110, E2751 (2013)
- 11. S. Thurner, P. Klimek, M. Szell, G. Duftschmid, G. Endel, A. Kautzky-Willer, D. Kasper Quantification of excess-risk for diabetes when born in times of hunger, in an entire population of a nation, across a century, *Proceedings of the National Academy of Sciences* 110, 4703–4707 (2013)
- 10. M. Szell, S. Thurner

How women organize social networks different than men, Scientific Reports 3, 1214 (2013)

- 9. M. Szell, R. Sinatra, G. Petri, S. Thurner, V. Latora Understanding mobility in a social petri dish, *Scientific Reports* 2, 457 (2012)
- 8. M. Szell, S. Thurner

Social dynamics in a large-scale online game, Advances in Complex Systems 15, 1250064 (2012)

7. S. Thurner, M. Szell, R. Sinatra

Emergence of good conduct, scaling and Zipf laws in human behavioral sequences in an online world, PLOS ONE 7, e29796 (2012)

6. M. Szell

Statistical physics approaches to large-scale socio-economic networks, Dissertation, University of Vienna (2011)

5. S. Thurner, M. Szell (Eds.)

Book of abstracts ECCS'11 Vienna, European Conference on Complex Systems 2011, Löcker (2011)

4. M. Szell, S. Thurner

Measuring social dynamics in a massive multiplayer online game, Social Networks 32, 313–329 (2010)

3. M. Szell, R. Lambiotte, S. Thurner

Multirelational organization of large-scale social networks in an online world, *Proceedings of the National Academy of Sciences* 107, 13636–13641 (2010)

2. M. Szell

Finite Differenzen Verfahren zur numerischen Lawinensimulation, *Diploma thesis*, Vienna University of Technology (2007)

1. M. Szell, F. Judex

Petri Net Modelling of Different Strategies in ARGESIM Comparison C4 "Dining Philosophers" with HPSim, Simulation News Europe 17, 1 (2007)

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