

On concepts and data-driven mobility modeling:

1. A. Helmy, "Small Worlds in Wireless Networks", *IEEE Communications Letters*, Vol. 7, No. 10, pp. 490-492, October 2003.
- Pedestrian mobility analysis and modeling
2. W. Hsu, D. Dutta, A. Helmy, "Mining Behavioral Groups in Large Wireless LANs", *ACM MobiCom (Int'l Conference on Mobile Computing and Networking)*, pp. 338-341, September 2007.
3. Frans Ekman, Ari Ker nen, Jouni Karvo, and Jörg Ott. "Working day movement model", *In Proceedings of the 1st ACM SIGMOBILE Workshop on Mobility Models*. ACM, New York, NY, 33-40, 2008.
DOI:<http://dx.doi.org/10.1145/1374688.1374695>
4. W. Hsu, T. Spyropoulos, K. Psounis, A. Helmy, *TVC*: "Modeling Spatial and Temporal Dependencies of User Mobility in Wireless Mobile Networks", *IEEE/ACM Transactions on Networking (ToN)*, Vol. 17, No. 5, pp. 1564-1577, October 2009.
5. W. Hsu, A. Helmy, "On Nodal Encounter Patterns in Wireless LAN Traces", *IEEE Transactions on Mobile Computing (TMC)*, Vol. 9, No. 11, pp. 1563-1577, November 2010.
6. G. Thakur, A. Helmy, W. Hsu, "Similarity Analysis and Modeling in Mobile Societies: The missing link", *ACM MobiCom CHANTS Workshop (on Challenged Networks)*, pp. 13 - 20, September 2010.
7. W. Hsu, D. Dutta, A. Helmy, *TRACE*: "Structural Analysis of User Association Patterns in University Campus Wireless LANs", *IEEE Transactions on Mobile Computing (TMC)*, Vol. 11, No. 11, pp. 1734-1748, November 2012.
8. W. Hsu, D. Dutta, A. Helmy, "CSI: A Paradigm for Behavior-oriented Profile-cast Services in Mobile Networks", *Ad Hoc Networks Journal-Elsevier*, Vol. 10, Iss. 8, pp. 1586-1602, November 2012.
9. G. Thakur, U. Kumar, W. Hsu. A. Helmy, "Gauging Human Mobility Characteristics and its Impact on Mobile Routing Performance", *Int'l Journal of Sensor Networks*, Vol. 11, Iss. 3, pp. 179-191, April 2012.
10. Andrea Hess, Karin Anna Hummel, Wilfried N. Gansterer, and Günter Haring. 2015. Data-driven Human Mobility Modeling: A Survey and Engineering Guidance for Mobile Networking. *ACM Comput. Surv.* 48, 3, Article 38 (December 2015), 39 pages. DOI: <http://dx.doi.org/10.1145/2840722>
11. G. Thakur, A. Helmy, "COBRA: A Framework for the Analysis of Realistic Mobility Models", *In proceedings of IEEE INFOCOM - Global Internet (GI) Symposium*, pp. 3351-3356, April 2013. [Winner of The Best Paper Award of the Internet Technical Committee (ITC) - IEEE ComSoc.]

12. B. Alipour, L. Tonetto, R. Ketabi, A. Ding, J. Ott, A. Helmy, “*Flutes vs. Cellos: Analyzing Mobility-Traffic Correlations in Large WLAN Traces*”, *IEEE INFOCOM*, April 2018.

- Vehicular mobility modeling and simulation

13. G. Thakur, P. Hui, A. Helmy, “Modeling and Characterization of Urban Streets’ Vehicular Mobility Using Web Cameras”, *IEEE INFOCOM – NetSciCom (Workshop on Network Science for Communication Networks)*, pp. 262-267, March 2012.
14. D. Fay, G. Thakur, P. Hui, A. Helmy, “Knowledge Discovery and Causality in Urban City Traffic: A study using Planet Scale Vehicular Imagery Data”, In proceedings of *ACM SIGSPATIAL IWCTS (Int’l workshop on Computational Transportation Science)*, November 2013. (Winner of The Best Paper Award).
15. G. Thakur, P. Hui, A. Helmy, “The Structure and Traffic Flow Anatomy of the Planet-Scale Urban Vehicular Mobility”, *Networking Science Journal – Springer*, ISSN 2076-0310, pp. 1-11, May 2013.
16. G. Thakur, P. Hui, A. Helmy, “Evidence of Long Range Dependence and Self-similarity in Urban Traffic Systems”, In proceedings of the *International Conference on Advances in Geographic Information Systems (ACM SIGSPATIAL)*, November 2015.
17. R. Ketabi, B. Alipour, A. Helmy, “En Route: Towards Vehicular Mobility Scenario Generation at Scale”, In proceedings of the *IEEE INFOCOM – SmartCity workshop*, May 2017. (Also, Best Poster Award, Infocom ‘17).

- Interest modeling

18. S. Moghaddam, A. Helmy, “Multidimensional Modeling and Analysis of Wireless Users Online Activity and Mobility: A Neural-networks Map Approach”, *ACM MSWiM (14th International Conference on Modeling, Analysis and Simulation of Wireless and Mobile Systems)*, pp. 401-408, Nov. 2011.
19. S. Moghaddam, A. Helmy, S. Ranka, M. Somaya, “Data-driven Co-clustering Model of Internet Usage in Large Mobile Societies”, *ACM MSWiM (13th International Conference on Modeling, Analysis and Simulation of Wireless and Mobile Systems)*, pp. 248 - 256, Oct 2010.

Data-driven mobile applications

20. G. Tuncay, G. Benincasa, A. Helmy, “Participant Recruitment and Data Collection Framework for Opportunistic Sensing: A Comparative Approach”, In proceedings of *ACM MobiCom, CHANTS (the 8th ACM MobiCom workshop on Challenged Networks)*, pp. 25-30, Sept 2013.

21. J. Kim, A. Helmy, "Analyzing the Mobility, Predictability and Evolution of WLAN Users", *Int'l Journal of Autonomous and Adaptive Communications Systems*, Vol. 7, Iss. 1/2, pp. 169-191, November 2014.
22. S. Moghaddam, A. Helmy, "Interest-based Mining and Modeling of Big Mobile Networks", (Regular paper) *In proceedings of IEEE Big Data Service (IEEE International Conference on Big Data Computing Service and Applications)*, March 2015.
- Simulation Tools
23. L. Breslau, D. Estrin, K. Fall, S. Floyd, J. Heidemann, A. Helmy, P. Huang, S. McCanne, K. Varadhan, Y. Xu, H. Yu, **NS-2**: "Advances in Network Simulation", *IEEE Computer*, vol.33, No.5, pp. 59-67, May 2000. [Top 65 most cited papers in computer science in 2000].
24. Ari Keränen, Jörg Ott, and Teemu Kärkkäinen, "The ONE simulator for DTN protocol evaluation", In *Proceedings of the 2nd International Conference on Simulation Tools and Techniques (Simutools)*. ICST (Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering), Brussels, Belgium, 55:1–55:10, 2009.
DOI:<http://dx.doi.org/10.4108/ICST.SIMUTOOLS2009.5674>
25. M. Behrisch et al., "Sumo—simulation of urban mobility: An overview," in *Proceedings of SIMUL 2011*.