Andreas Züfle, Ph.D. Curriculum Vita (Updated 08/23/2020)

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Employment History

- Jan. 2016 – present: **Assistant Professor.** Department of Geography and Geoinformation Science, College of Science, George Mason University.
- Aug. 2013 – Dec. 2015: **Postdoctoral Researcher and Lecturer.** Department of Database Systems and Data Mining. Ludwig Maximilian University Munich.
- Apr. 2008 – Aug. 2013: **Research and Teaching Assistant.** Department of Database Systems and Data Mining. Ludwig Maximilian University Munich.

Education

- 2008 – 2013: **Ph.D., Ludwig Maximilian University of Munich, Germany** in Computer Science.
  Highest Academic Distinction: **Summa Cum Laude**
  Thesis title: *Similarity search and mining in uncertain spatial and spatio-temporal databases.*
- 2001 – 2008: **Diploma in Computer Science, Ludwig Maximilian University of Munich, Germany**
  Concentration on Database Systems and Data Mining
  Minor in Applied Statistics
  Thesis title: *Statistical Density Prediction in Traffic Networks.*

Summary of Academic Achievements at George Mason University

- # Peer Reviewed Publications: **97**
- # Citations (Google Scholar): **1,463**
- H-Index (Google Scholar): **19**
- # Research Proposals: Funded: **4**; Pending: **1**; Declined: **7**
- Sponsored Funding: as PI: **$1,557,290**; as co-PI: **$ 707,850**; Total: **$2,265,140**
- Teaching Summary: # Courses taught (GMU): **12**; # Students (GMU): **193**; Avg. Teaching Rating: **4.68 (out of 5)**
- Student Supervision: Ph.D. (MS) Completed: **2 (7)**; Ph.D. (MS) Committee Director: **7 (3)**; Ph.D. (MS) Committee Member: **9 (7)**; Undergrad and High School: **10**; Postdoctoral: **6**
- Academic Service: Conference/Workshop Organization Roles: **12**; Program Committee Memberships: **36**; Editorial Roles: **4**; # Papers Reviewed since 2016: **216**

Awards and Recognition

August 2020 — **Prescriptive Analytics Challenge 4th Place Award** at the Challenge on Mobility Intervention for Epidemics at the first ACM KDD Workshop on Prescriptive Analytics for the Physical World (PAPW 2020).
https://prescriptive-analytics.github.io/

July 2020 — **Best Paper Award Runner-Up** at the 21st IEEE International Conference on Mobile Data Management (MDM 2020), Versailles, France (online).
http://mdmconferences.org/mdm2020/

May 2020 — **Outstanding Reviewer Award** at the 24th Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD), Singapore (online).
https://www.pakdd2020.org/awards.html

November 2019 — **ACM SIGSPATIAL Cup 1st Place** at the 27th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems (ACM SIGSPATIAL 2019)
https://sigspatial2019.sigspatial.org/giscup2019/results

August 2019 — **Best Paper Award Runner-Up** at the 16th International Symposium on Spatial and Temporal Databases (SSTD), Vienna, Austria.
http://sstd2019.org/program.html#awards

Best Vision Paper Award Runner-Up at the 16th International Symposium on Spatial and Temporal Databases (SSTD), Vienna, Austria.
http://sstd2019.org/program.html#awards

November 2017 — **1st Place Hackathon Winner** at the Transportation and Mobility Hackathon organizers by Fairfax County and the Virginia Department of Transportation , Washington DC, USA. (Team Leader)
https://www.fairfaxcounty.gov/economic-success/transportation-mobility-hackathon

August 2017 — **Best Vision Paper Award** at the 15th International Symposium on Spatial and Temporal Databases (SSTD), Washington DC, USA.

August 2015 — **Best Demonstration Paper Award** at the 14th International Symposium on Spatial and Temporal Databases (SSTD), Hong Kong, China.

Research Publications

In computer science, data science, and related fields, conferences are the main venue for high-impact publications. Conferences in these fields are highly selective, having 3-5 reviewers per paper. Top-conferences maintain acceptance rates of less than 20%. In addition, many conferences (including ACM SIGSPATIAL, ICDE, ACM SIGMOD and VLDB) have a revision phase, requiring authors to revise their papers subject to another round of reviews.
Meyer et al. [1, below] gives a survey of the way computer scientists think about conferences vs. journals, stating that "Journals do not necessarily carry more prestige". The structure of publications in the field of computer science are further described by Patterson et al. [2, below], stating that "conference publication is preferred in the field". To summarize the usage of conferences and journal in computer science:

- Conferences are fast, higher status, higher selectivity, and higher visibility.
- Journals are used for survey articles and "extended versions" papers (the typical threshold is "at least 30% new material").

1. Meyer, Bertrand, Christine Choppy, Jørgen Staunstrup and Jan van Leeuwen (2009). *Research evaluation for computer science. Communications of the ACM*. URL: http://medicina.unica.it/pacs/documenti/Research_Evaluation_CACM.pdf.
2. Patterson, David, Lawrence Snyder and Jeffrey Ullman (1999). *Evaluating computer scientists and engineers for promotion and tenure. Computing Research Association.* URL: https://cra.org/resources/best-practice-memos/evaluating-computer-scientists-and-engineers-for-promotion-and-tenure/.

Consequentially, as a computer scientist, my track record includes 17 fully refereed journal publications and 80 fully refereed conference publications. All publications published in 2016 or later carry my GGS affiliation. Impact factors and acceptance rates are provided for assessment. Graduate student authors are underlined. Undergraduate student authors are boxed.

Peer Reviewed Journal Articles

1. Askar, Ahmed and **Andreas Züfle** (2020). 'Exploring Spatio-Temporal Clusters of AdverseEvents for Post-Market Approved Drugs'. In: *ISPRS International Journal of Geo-Information (Under Review - First Round)*.
2. Li, Yun, Chaowei Yang and **Andreas Züfle** (2020). 'A Spark and Density-Based Algorithm for Clustering Multivariate Geospatial Raster Data'. In: *International Journal of Geographical Information Science (Under Review - Major Revision)*.
3. Sikder, Aisha and **Andreas Züfle** (2020). 'Augmenting Geostatistics with Matrix Factorization: A Case Study for House Price Estimation'. In: *ISPRS International Journal of Geo-Information (Impact Factor 2.239)* 9.5.
4. Yuan, Xiaoyi, Andrew Crooks and **Andreas Züfle** (2020). 'A Thematic Similarity Network Approach for Analysis of Places Using Volunteered Geographic Information'. In: *ISPRS International Journal of Geo-Information (Impact Factor 2.239)* 9.6.
5. Frey, C., **Andreas Züfle**, Tobias Emrich and Matthias Renz (2018). 'Efficient Information Flow Maximization in Probabilistic Graphs'. In: *IEEE Transactions on Knowledge and Data Engineering (Impact Factor: 2.775)* 30.5, pp. 880–894.
6. Truong, R., Olga Gkountouna, Dieter Pfoser and **Andreas Züfle** (2018). 'Towards a Better Understanding of Public Transportation Traffic: A Case Study of the Washington, DC Metro'. In: *Urban Science (Impact Factor: Not Available.)* 2.3, p. 65.

7 Jossé, G., Schmid, K. A., **Andreas Züfle**, Skoumas, G., Matthias Schubert, Matthias Renz, Dieter Pfoser and Mario A. Nascimento (2017). 'Knowledge extraction from crowdsourced data for the enrichment of road networks'. In: *GeoInformatica (Impact Factor: 2.091)* 21.4, pp. 763–795.

8 Schmid, K.A., **Andreas Züfle**, Tobias Emrich, Matthias Renz and Reynold Cheng (2017). 'Uncertain Voronoi cell computation based on space decomposition'. In: *GeoInformatica (Impact Factor: 2.091)* 21.4, pp. 797–827.

9 Emrich, Tobias, Hans-Peter Kriegel, Peer Kröger, Niedermayer, J., Matthias Renz and **Andreas Züfle** (2015). 'On reverse-k-nearest-neighbor joins'. In: *GeoInformatica (Impact Factor: 2.091)* 19.2, pp. 299–330.

10 Schubert, Erich, Koos, A., Tobias Emrich, **Andreas Züfle**, Schmid, K.A. and Arthur Zimek (2015). 'A Framework for Clustering Uncertain Data'. In: *Proceedings of the VLDB Endowment (Impact Factor: N/A. Acceptance Rate: 17%)* 8.12, pp. 1976–1979.

11 Bernecker, Thomas, Reynold Cheng, David W. Cheung, Hans-Peter Kriegel, Sau Dan Lee, Matthias Renz, Florian Verhein, Liang Wang and **Andreas Züfle** (2013). 'Model-based probabilistic frequent itemset mining'. In: *Knowledge and Information Systems (KAIS. Impact Factor: 2.247)* 37.1, pp. 181–217.

12 Bernecker, Thomas, Tobias Emrich, Hans-Peter Kriegel, Nikos Mamoulis, Matthias Renz, Shiming Zhang and **Andreas Züfle** (2013). 'Spatial inverse query processing'. In: *GeoInformatica (Impact Factor: 2.091)* 17.3, pp. 449–487.

13 Niedermayer, J., **Züfle, A.**, Tobias Emrich, Matthias Renz, Nikos Mamoulis, Lei Chen and Hans-Peter Kriegel (2013). 'Probabilistic Nearest Neighbor Queries on Uncertain Moving Object Trajectories'. In: *Proceedings of the VLDB Endowment (Impact Factor: N/A. Acceptance Rate: 22.7%)* 7.3, pp. 205–216.

14 Kriegel, Hans-Peter, Matthias Renz, Matthias Schubert and A. Züfle (2012). 'Efficient Traffic Density Prediction in Road Networks Using Suffix Trees'. In: *KI (Künstliche Intelligenz. Impact Factor: N/A)* 26.3, pp. 233–240.

15 Bernecker, T., Emrich, T., Hans-Peter Kriegel, Matthias Renz, Zankl, S. and **Züfle, A.** (2011). 'Efficient Probabilistic Reverse Nearest Neighbor Query Processing on Uncertain Data'. In: *Proceedings of the VLDB Endowment (Impact Factor: N/A. Acceptance Rate: 18.1%)* 4.10, pp. 669–680.

16 Bernecker, T., Hans-Peter Kriegel, Nikos Mamoulis, Matthias Renz and **Züfle, A.** (2010). 'Scalable Probabilistic Similarity Ranking in Uncertain Databases'. In: *IEEE Transactions on Knowledge and Data Engineering (Impact Factor: 2.775)* 22.9, pp. 1234–1246.

17 Renz, Matthias, Reynold Cheng, Hans-Peter Kriegel, **Züfle, A.** and Bernecker, T. (2010). 'Similarity Search and Mining in Uncertain Databases'. In: *Proceedings of the VLDB Endowment (Impact Factor N/A. Acceptance Rate: 33%)* 3.2, pp. 1653–1654.

Peer Reviewed Conference Papers

1. Gkountouna, Olga, Dieter Pfoser and **Andreas Züfle** (2020). 'Traffic Flow Estimation using Probe Vehicle Data'. In: *Proceedings of the 7th IEEE International Conference on Data Science and Advanced Analytics (Acceptance Rate: TBA. Around 20% for full papers in previous years)*.

2. Kim, Joon-Seok, Hyunjee Jin, Hamdi Kavak, Ovi Chris Rouly, Andrew Crooks, Dieter Pfoser, Carola Wenk and **Andreas Züfle** (2020). 'Location-based Social Network Data Generation Based on Patterns of Life'. In: *IEEE International Conference on Mobile Data Management (MDM'20)(Acceptance Rate: 23%)*. pp. 158–167.

3. Kim, Joon-Seok, Dieter Pfoser and **Andreas Züfle** (2020). 'Vehicle Relocation for Ride-Hailing'. In: *Proceedings of the 7th IEEE International Conference on Data Science and Advanced Analytics (Acceptance Rate: TBA. Around 20% for full papers in previous years)*.

4. Xu Teng, Goce Trajcevski, Joon-Seok Kim and **Andreas Züfle** (2020). 'Semantically Diverse Path Search'. In: *IEEE International Conference on Mobile Data Management (MDM'20)(Acceptance Rate: 23%)*. pp. 69–78.

5. Zhang, Liming, **Andreas Züfle** and Dieter Pfoser (2020a). 'Station-to-User Transfer Learning: Towards Explainable User Clustering Through Latent Trip Signatures Using Tidal-Regularized Non-Negative Matrix Factorization'. In: *Proceedings of the 28th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems (To Appear) (Acceptance Rate: 22.1%)*.

6. **Züfle**, **Andreas**, Goce Trajcevski, Dieter Pfoser and Joon-Seok Kim (2020). 'Managing Uncertainty in Evolving Geo-Spatial Data'. In: *IEEE International Conference on Mobile Data Management (MDM'20)(Acceptance Rate: 23%)*. pp. 5–8.

7. Cheng, Dan, Olga Gkountouna, **Andreas Züfle**, Dieter Pfoser and Carola Wenk (2019). 'Shortest-Path Diversification through Network Penalization: A Washington DC Area Case Study'. In: *Proceedings of the 12th ACM SIGSPATIAL International Workshop on Computational Transportation Science (Acceptance Rate: 50%)*, pp. 1–10.

8. Fei, Xiqi, Olga Gkountouna, Dieter Pfoser and **Andreas Züfle** (2019). 'Spatiotemporal Bus Route Profiling using Odometer Data'. In: *Proceedings of the 27th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems (Acceptance Rate: 30%)*, pp. 369–378.

9. Kavak, Hamdi, Joon-Seok Kim, Andrew Crooks, Dieter Pfoser, Carola Wenk and **Andreas Züfle** (2019). 'Location-based social simulation'. In: *Proceedings of the 16th International Symposium on Spatial and Temporal Databases (SSTD) (Acceptance Rate: 32%)*, pp. 218–221.

10. Khan, Tunaggina Subrina, Kabir, Anowarul, Dieter Pfoser and **Andreas Züfle** (2019). 'CrowdZIP: A System to Improve Reverse ZIP Code Geocoding using Spatial and Crowdsourced Data (Demo Paper)'. In: *Proceedings of the 27th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems (Acceptance Rate: 21.1%)*, pp. 588–591.

11. Kim, Joon-Seok, Hamdi Kavak, Umar Manzoor, Andrew Crooks, Dieter Pfoser, Carola Wenk and **Andreas Züfle** (2019). 'Simulating Urban Patterns of Life: A Geo-Social Data Generation Framework'. In: *Proceedings of the 27th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems (Acceptance Rate: 21.1%)*, pp. 576–579.

12. Kim, Joon-Seok, Hamdi Kavak, Umar Manzoor and **Andreas Züfle** (2019). 'Advancing simulation experimentation capabilities with runtime interventions'. In: *2019 Spring Simulation Conference (SpringSim). (Acceptance Rate: 30%)*, pp. 1–11.

13. Kim, Joon-Seok, Dieter Pfoser and **Andreas Züfle** (2019). 'Distance-Aware Competitive Spatiotemporal Searching Using Spatiotemporal Resource Matrix Factorization (GIS Cup)'. In: *Proceedings of the 27th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems (Acceptance Rate: 31%)*, pp. 624–627.

14. Schmid, Klaus Arthur and **Andreas Züfle** (2019). 'Representative Query Answers on Uncertain Data'. In: *Proceedings of the 16th International Symposium on Spatial and Temporal Databases (SSTD) (Acceptance Rate: 32%)*, pp. 140–149.

15. Sikder, Aisha and **Andreas Züfle** (2019). 'Emotion predictions in geo-textual data using spatial statistics and recommendation systems'. In: *Proceedings of the 3rd ACM SIGSPATIAL International Workshop on Location-based Recommendations, Geosocial Networks and Geoadvertising (Acceptance Rate: 50%)*, pp. 1–4.

16. Teng, Xu, Yang, Jingchao, Joon-Seok Kim, Goce Trajcevski, **Andreas Züfle** and Mario A Nascimento (2019). 'Fine-Grained Diversification of Proximity Constrained Queries on Road Networks'. In: *Proceedings of the 16th International Symposium on Spatial and Temporal Databases (SSTD) (Acceptance Rate: 32%)*, pp. 51–60.

17. Franzke, M., **Andreas Züfle**, Matthias Renz and Tobias Emrich (2018). 'Pattern Search in Temporal Social Networks'. In: *Proceedings of the 21th International Conference on Extending Database Technology, EDBT 2018, Vienna, Austria, March 26-29, 2018. (Acceptance Rate: 18.3%)*, pp. 289–300.

18. Frey, C., **Andreas Züfle**, Tobias Emrich and Matthias Renz (2018). 'Efficient Information Flow Maximization in Probabilistic Graphs (Extended Abstract.' In: *34th IEEE International Conference on Data Engineering, ICDE 2018, Paris, France, April 16-19, 2018. (Acceptance Rate: 18.5%)*, pp. 1801–1802.

19. Snowdon, J., Olga Gkountouna, **Andreas Züfle** and Dieter Pfoser (2018). 'Spatiotemporal Traffic Volume Estimation Model Based on GPS Samples'. In: *Proceedings of the Fifth International ACM SIGMOD Workshop on Managing and Mining Enriched Geo-Spatial Data, GeoRich@SIGMOD 2018, Houston, TX, USA, June 15, 2018. (Acceptance Rate: 45%)*, pp. 1–6.

20. Teng, X., **Andreas Züfle**, Goce Trajcevski and Diego Klabjan (2018). 'Location-Awareness in Time Series Compression'. In: *European Conference on Advances in Databases and Information Systems (Acceptance Rate: 24.2%)*. Springer, pp. 82–95.

21. Wang, J., Gao, Y., **Andreas Züfle**, Jingyuan Yang and Liang Zhao (2018). 'Incomplete Label Uncertainty Estimation for Petition Victory Prediction with Dynamic Features.' In: *IEEE International Conference on Data Mining (ICDM) 2018. (Acceptance Rate: 8.4%)*. IEEE, pp. 537–546.

22. Gkountouna, Olga, Dieter Pfoser, Carola Wenk and **Andreas Züfle** (2017). 'A Unified Framework to Predict Movement'. In: *Advances in Spatial and Temporal Databases - 15th International Symposium, SSTD 2017, Arlington, VA, USA, August 21-23, 2017, Proceedings (Acceptance Rate: 38.4%)*, pp. 393–397.

23. Hubig, N., Fengler, P., **Andreas Züfle**, Ruixin Yang and Stephan Günnemann (2017). 'Detection and Prediction of Natural Hazards Using Large-Scale Environmental Data'. In: *Advances in Spatial and Temporal Databases - 15th International Symposium, SSTD 2017, Arlington, VA, USA, August 21-23, 2017, Proceedings (Acceptance Rate: 32.7%)*, pp. 300–316.

24. Li, Renee, **Andreas Züfle**, Liang Zhao and Georgios Lamprianidis (2017). 'Modeling and Prediction of People's Needs (Vision Paper)'. In: *Proceedings of the 1st ACM SIGSPATIAL Workshop on Analytics for Local Events and News (Acceptance Rate: 50%)*. ACM, p. 3.

25 Lin, E., Park, J. D. and **Andreas Züfle** (2017). 'Real-Time Bayesian Micro-Analysis for Metro Traffic Prediction'. In: *Proceedings of the 3rd ACM SIGSPATIAL Workshop on Smart Cities and Urban Analytics, Redondo Beach, CA, USA, November 7, 2017 (Acceptance Rate: 25.0%)*, 12:1–12:4.

26 Park, J. D., Seglem, E., Lin, E. and **Andreas Züfle** (2017). 'Protecting User Privacy: Obfuscating Discriminative Spatio-Temporal Footprints'. In: *Proceedings of the 1st ACM SIGSPATIAL Workshop on Recommendations for Location-based Services and Social Networks, LocalRec@SIGSPATIAL 2017, Redondo Beach, CA, USA, November 7-10, 2017. (Acceptance Rate: 60%)*, 2:1–2:4.

27 Schmid, K.A., **Andreas Züfle**, Dieter Pfoser, Andrew Crooks, Arie Croitoru and Anthony Stefanidis (2017). 'Predicting the Evolution of Narratives in Social Media'. In: *Advances in Spatial and Temporal Databases - 15th International Symposium, SSTD 2017, Arlington, VA, USA, August 21-23, 2017, Proceedings (Acceptance Rate: 38.4%)*, pp. 388–392.

28 Seglem, E., **Andreas Züfle**, Stutzki, J., Borutta, F., Faerman, E. and Matthias Schubert (2017). 'On Privacy in Spatio-Temporal Data: User Identification Using Microblog Data'. In: *Advances in Spatial and Temporal Databases - 15th International Symposium, SSTD 2017, Arlington, VA, USA, August 21-23, 2017, Proceedings (Acceptance Rate: 32.7%)*, pp. 43–61.

29 Sohail, A., Taniar, D., **Andreas Züfle** and Jeong-Ho Park (2017). 'Query Processing in Location-Based Social Networks'. In: *Proceedings of the 26th International Conference on World Wide Web Companion, Perth, Australia, April 3-7, 2017 (Acceptance Rate: 17.0%)*, pp. 1379–1381.

30 Yang, G. and **Andreas Züfle** (2017). 'Spatio-temporal prediction of social connections'. In: *Proceedings of the Fourth International ACM Workshop on Managing and Mining Enriched Geo-Spatial Data, Chicago, IL, USA, May 14, 2017 (Acceptance Rate: 44%)*, 6:1–6:6.

31 **Züfle**, **Andreas**, Goce Trajcevski, Dieter Pfoser, Matthias Renz, Matthew T. Rice, Timothy Leslie, Paul L. Delamater and Tobias Emrich (2017). 'Handling Uncertainty in Geo-Spatial Data'. In: *33rd IEEE International Conference on Data Engineering, ICDE 2017, San Diego, CA, USA, April 19-22, 2017 (Acceptance Rate: 17.7%)*, pp. 1467–1470.

32 Franzke, M., Bleicher, J. and **Andreas Züfle** (2016). 'Finding Influencers in Temporal Social Networks Using Intervention Analysis'. In: *Databases Theory and Applications - 27th Australasian Database Conference, ADC 2016, Sydney, NSW, Australia, September 28-29, 2016, Proceedings (Acceptance Rate: 44%)*, pp. 3–16.

33 Franzke, M., Tobias Emrich, **Andreas Züfle** and Matthias Renz (2016). 'Indexing multi-metric data'. In: *32nd IEEE International Conference on Data Engineering, ICDE 2016, Helsinki, Finland, May 16-20, 2016 (Acceptance Rate: 18%)*, pp. 1122–1133.

34 Schmid, K.A., Frey, C., Peng, F., Weiler, M., **Andreas Züfle**, Lei Chen and Matthias Renz (2016). 'TrendTracker: Modelling the Motion of Trends in Space and Time'. In: *IEEE International Conference on Data Mining Workshops, ICDM Workshops 2016, December 12-15, 2016, Barcelona, Spain. (Acceptance Rate: 33%)*, pp. 1145–1152.

35 Yang, G. and **Andreas Züfle** (2016). 'Spatio-Temporal Site Recommendation'. In: *IEEE International Conference on Data Mining Workshops, ICDM Workshops 2016, December 12-15, 2016, Barcelona, Spain. (Acceptance Rate: 33%)*, pp. 1173–1178.

36 Emrich, Tobias, Schmid, K.A., **Andreas Züfle**, Matthias Renz and Reynold Cheng (2015). 'Uncertain Voronoi Cell Computation Based on Space Decomposition'. In: *Advances in Spatial and Temporal Databases - 14th International Symposium, SSTD 2015, Hong Kong, China, August 26-28, 2015. Proceedings (Acceptance Rate: 37.5%)*, pp. 98–116.

37 Jossé, G., Franzke, M., Skoumas, G., **Andreas Züfle**, Mario A. Nascimento and Matthias Renz (2015). 'A framework for computation of popular paths from crowdsourced data'. In: *31st IEEE International Conference on Data Engineering, ICDE 2015, Seoul, South Korea, April 13-17, 2015 (Acceptance Rate: 25%)*, pp. 1428–1431.

38 Jossé, G., Schmid, K.A., **Andreas Züfle**, Skoumas, G., Matthias Schubert and Dieter Pfoser (2015). 'Tourismo: A User-Preference Tourist Trip Search Engine'. In: *Advances in Spatial and Temporal Databases - 14th International Symposium, SSTD 2015, Hong Kong, China, August 26-28, 2015. Proceedings (Acceptance Rate: 37.5%)*, pp. 514–519.

39 Mauder, M., Reisinger, M., Tobias Emrich, **Andreas Züfle**, Matthias Renz, Goce Trajcevski and Roberto Tamassia (2015). 'Minimal Spatio-Temporal Database Repairs'. In: *Advances in Spatial and Temporal Databases - 14th International Symposium, SSTD 2015, Hong Kong, China, August 26-28, 2015. Proceedings (Acceptance Rate: 37.5%)*, pp. 255–273.

40 Skoumas, G., Schmid, K.A., Gregor Jossé, G., Matthias Schubert, Mario A. Nascimento, **Andreas Züfle**, Matthias Renz and Dieter Pfoser (2015). 'Knowledge-Enriched Route Computation'. In: *Advances in Spatial and Temporal Databases - 14th International Symposium, SSTD 2015, Hong Kong, China, August 26-28, 2015. Proceedings (Acceptance Rate: 37.5%)*, pp. 157–176.

41 Uskat, D., Tobias Emrich, **Andreas Züfle**, Schmid, K.A., Thomas Bernecker and Matthias Renz (2015). 'Similarity search in fuzzy object databases'. In: *Proceedings of the 27th International Conference on Scientific and Statistical Database Management, SSDBM '15, La Jolla, CA, USA, June 29 - July 1, 2015 ((Acceptance Rate: 25%))*, 32:1–32:6.

42 Weiler, M., **Andreas Züfle**, Borutta, F. and Tobias Emrich (2015). 'Socio Textual Mapping'. In: *Proceedings of the 8th ACM SIGSPATIAL International Workshop on Location-Based Social Networks, LBSN 2015, Bellevue, WA, USA, November 3-6, 2015 (Acceptance Rate: 33%)*, 6:1–6:4.

43 Cheng, Reynold, Tobias Emrich, Hans-Peter Kriegel, Nikos Mamoulis, Matthias Renz, Goce Trajcevski and **Andreas Züfle** (2014). 'Managing uncertainty in spatial and spatio-temporal data'. In: *IEEE 30th International Conference on Data Engineering, Chicago, ICDE 2014, IL, USA, March 31 - April 4, 2014 (Acceptance Rate: 25%)*, pp. 1302–1305.

44 Emrich, Tobias, Franzke, M., Hans-Peter Kriegel, Niedermayer, J., Matthias Renz and **Andreas Züfle** (2014). 'An extendable framework for managing uncertain spatio-temporal data'. In: *International Conference on Management of Data, SIGMOD 2014, Snowbird, UT, USA, June 22-27, 2014 (Acceptance Rate: 25%)*, pp. 1087–1090.

45 Emrich, Tobias, Franzke, M., Nikos Mamoulis, Matthias Renz and **Andreas Züfle** (2014). 'Geo-Social Skyline Queries'. In: *Database Systems for Advanced Applications - 19th International Conference, DASFAA 2014, Bali, Indonesia, April 21-24, 2014. Proceedings, Part II (Acceptance Rate: 23.4%)*, pp. 77–91.

46 Emrich, Tobias, Hans-Peter Kriegel, Nikos Mamoulis, Niedermayer, J., Matthias Renz and **Andreas Züfle** (2014). 'Reverse-Nearest Neighbor Queries on Uncertain Moving Object Trajectories'. In: *Database Systems for Advanced Applications - 19th International Conference, DASFAA 2014, Bali, Indonesia, April 21-24, 2014. Proceedings, Part II (Acceptance Rate: 23.4%)*, pp. 92–107.

47 Hubig, N., **Andreas Züfle**, Tobias Emrich, Matthias Renz, Mario A. Nascimento and Hans-Peter Kriegel (2014). 'Monitoring Probabilistic Threshold SUM Query Processing in Uncertain Streams'. In: *Database Systems for Advanced Applications - 19th International Conference, DASFAA 2014, Bali, Indonesia, April 21-24, 2014. Proceedings, Part I (Acceptance Rate: 23.4%)*, pp. 420–435.

48 Skoumas, G., Schmid, K.A., Jossé, G., **Andreas Züfle**, Mario A. Nascimento, Matthias Renz and Dieter Pfoser (2014a). 'Towards knowledge-enriched path computation'. In: *Proceedings of the 22nd ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems, Dallas/Fort Worth, TX, USA, November 4-7, 2014 (Acceptance Rate: 32%)*, pp. 485–488.

49 **Züfle**, **Andreas**, Tobias Emrich, Schmid, K.A., Nikos Mamoulis, Arthur Zimek and Matthias Renz (2014). 'Representative clustering of uncertain data'. In: *The 20th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining, KDD '14, New York, NY, USA - August 24 - 27, 2014 (Acceptance Rate: 15%)*, pp. 243–252.

50 Emrich, T., Jossé, G., Hans-Peter Kriegel, Mauder, M., Niedermayer, J., Matthias Renz, Matthias Schubert and **Züfle, A.** (2013). 'Optimal Distance Bounds for the Mahalanobis Distance'. In: *Similarity Search and Applications - 6th International Conference, SISAP 2013, A Coruña, Spain, October 2-4, 2013, Proceedings*, pp. 175–181.

51 Emrich, T., Hans-Peter Kriegel, Peer Kröger, Niedermayer, J., Matthias Renz and **Züfle, A.** (2013). 'Reverse-k-Nearest-Neighbor Join Processing'. In: *Advances in Spatial and Temporal Databases - 13th International Symposium, SSTD 2013, Munich, Germany, August 21-23, 2013. Proceedings. (Acceptance Rate: 41%)*, pp. 277–294.

52 Emrich, T., Hans-Peter Kriegel, Mauder, M., Matthias Renz, Goce Trajcevski and **Züfle, A.** (2013). 'Minimal spatio-temporal database repairs'. In: *21st SIGSPATIAL International Conference on Advances in Geographic Information Systems, SIGSPATIAL 2013, Orlando, FL, USA, November 5-8, 2013*, pp. 482–485.

53 Emrich, T., Peer Kröger, Niedermayer, J., Matthias Renz and **Züfle, A.** (2013). 'A Mutual Pruning Approach for RkNN Join Processing'. In: *Datenbanksysteme für Business, Technologie und Web (BTW), 15. Fachtagung des GI-Fachbereichs "Datenbanken und Informationssysteme" (DBIS), 11.-15.3.2013 in Magdeburg, Germany. Proceedings*, pp. 21–35.

54 Niedermayer, J., **Züfle, A.**, Emrich, T., Matthias Renz, Nikos Mamoulis, Lei Chen and Hans-Peter Kriegel (2013b). 'Similarity Search on Uncertain Spatio-temporal Data'. In: *Similarity Search and Applications - 6th International Conference, SISAP 2013, A Coruña, Spain, October 2-4, 2013, Proceedings (Acceptance Rate: N/A)*, pp. 43–49.

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Non-Peer Reviewed Published Papers, Editorials and Monographs

1. Kim, Joon-Seok, Hamdi Kavak, Chris Ovi Rouly, Hyunjee Jin, Andrew Crooks, Dieter Pfoser, Carola Wenk and **Andreas Züfle** (2020). *Location-based social simulation for prescriptive analytics of disease spread. SIGSPATIAL Special Newsletter 12 (1). pp 53–61.*
2. Krumm, John, Cyrus Shahabi and **Andreas Züfle** (2020). *Spatial gems 2019 workshop report: The 1st ACM SIGSPATIAL International Workshop on Spatial Gems. SIGSPATIAL Special Newsletter 11 (3). pp. 15–17.*
3. Zhang, Liming, **Andreas Züfle** and Dieter Pfoser (2020b). *Station-to-User Transfer Learning: Towards Explainable User Clustering Through Latent Trip Signatures Using Tidal-Regularized Non-Negative Matrix Factorization (arXiv preprint).*
4. **Züfle**, **Andreas** (2020e). *Introduction to this Special Issue: Modeling and Understanding the Spread of COVID-19: (Part I). SIGSPATIAL Special Newsletter. pp. 1–2.*
5. **Züfle**, **Andreas** (2020f). *SIGSPATIAL Special Volume 11 Issue 3.*
6. **Züfle**, **Andreas** (2020g). *SIGSPATIAL Special Volume 12 Issue 1.*
7. Emrich, Tobias, Hans-Peter Kriegel, **Andreas Züfle**, Peer Kröger and Matthias Renz (2019). *Complete and Sufficient Spatial Domination of Multidimensional Rectangles. arXiv preprint arXiv:2001.05581. To appear in Spatial Gems 2020.*
8. Kim, Joon-Seok, Hamdi Kavak, **Andreas Züfle**, Andrew Crooks, Umar Manzoor and Paul M Torrens (2019). *Proceedings of the First ACM SIGSPATIAL Geosim 2018 Workshop on Geospatial Simulation, Seattle, Washington, USA, November 6 - November 9, 2018. SIGSPATIAL Special Newsletter 10 (3). pp. 28-29.*
9. Krumm, John, Cyrus Shahabi and **Andreas Züfle** (2019). *Spatial gems: a new type of workshop at the SIGSPATIAL conference. SIGSPATIAL Special Newsetter 11 (1). pp. 36.*
10. **Züfle**, **Andreas** (2019h). *SIGSPATIAL Special Volume 11 Issue 1.*
11. **Züfle**, **Andreas** (2019i). *SIGSPATIAL Special Volume 11 Issue 2.*
12. **Züfle**, **Andreas** (2019j). *Visions and challenges in GeoAI, Ethics, and Spatial Quantum Computing. SIGSPATIAL Special Newsletter 11 (2). pp. 2-4.*
13. **Züfle**, **Andreas** (2018n). *Introduction to this special issue: urban analytics and mobility (part 1). In SIGSPATIAL Special 10(1). pp 2.*
14. **Züfle**, **Andreas** (2018o). *Introduction to this special issue: urban analytics and mobility (part 2). In SIGSPATIAL Special 10(2). pp 2.*
15. **Züfle**, **Andreas** (2018p). *SIGSPATIAL Special Volume 10 Issue 1.*
16. **Züfle**, **Andreas** (2018q). *SIGSPATIAL Special Volume 10 Issue 2.*
17. **Züfle**, **Andreas** (2018r). *SIGSPATIAL Special Volume 10 Issue 3.*
18. Frey, C., **Andreas Züfle**, Tobias Emrich and Matthias Renz (2017). *Efficient Information Flow Maximization in Probabilistic Graphs. arXiv preprint.*
19. **Züfle**, **Andreas** (2016f). *Bayesian network movement model. In SIGSPATIAL Special 8(2), pp. 18–25.*
20. **Züfle**, **Andreas**, Benjamin Adams and Dingming Wu (2016). *Proceedings of the Third International ACM SIGMOD Workshop on Managing and Mining Enriched Geo-Spatial Data, GeoRich@SIGMOD 2016, San Francisco, California, USA, June 26 - July 1, 2016.*

21 Mouratidis, Kyriakos, Matthias Renz, Tobias Emrich, **Andreas Züfle** and Krzysztof Janowicz (2015). *Second International ACM Workshop on Managing and Mining Enriched Geo-Spatial Data, GeoRich@SIGMOD 2015, Melbourne, VIC, Australia, May 31, 2015*.

22 Nascimento, Mario A., Matthias Renz, Tobias Emrich, Kyriakos Mouratidis and **Andreas Züfle** (2014). *Proceedings of Workshop on Managing and Mining Enriched Geo-Spatial Data, GeoRich@SIGMOD 2014, Snowbird, UT, USA, June 27, 2014*.

23 Skoumas, G., Schmid, K.A., Jossé, G., **Andreas Züfle**, Mario A. Nascimento, Matthias Renz and Dieter Pfoser (2014b). *Towards Knowledge-Enriched Path Computation. Corr/ArXiv*.

24 Niedermayer, J., **Züfle, A.**, Emrich, T., Matthias Renz, Nikos Mamoulis, Lei Chen and Hans-Peter Kriegel (2013a). *Probabilistic Nearest Neighbor Queries on Uncertain Moving Object Trajectories. Corr/ArXiv*.

25 Bernecker, T., Emrich, T., Hans-Peter Kriegel, Nikos Mamoulis, Matthias Renz, Zhang, S. and **Züfle, A.** (2011b). *Inverse Queries For Multidimensional Spaces. Corr/ArXiv*.

26 Bernecker, T., Emrich, T., Hans-Peter Kriegel, Nikos Mamoulis, Matthias Renz and **Züfle, A.** (2011b). *A Novel Probabilistic Pruning Approach to Speed Up Similarity Queries in Uncertain Databases. Corr/ArXiv*.

27 Bernecker, T., Hans-Peter Kriegel, Nikos Mamoulis, Matthias Renz and **Züfle, A.** (2009). *Scalable Probabilistic Similarity Ranking in Uncertain Databases (Technical Report). Corr/ArXiv*.

Sponsored Research Activity

National Science Foundation
Project Title: AitF: Collaborative Research: Modeling movement on transportation networks using uncertain data
GMU Grant: #203981/203982
Award: CCF-1637541
Role: Co-Principal Investigator
Principal Investigator: Pfoser, Dieter
Total Budget Amount: $507,852
Performance Period: 09/01/2016 - 08/31/2021
Commitment per Year: 1 Summer Month
Proposal Status: Awarded

Project Related Publications

1. Xu Teng, Goce Trajcevski, Joon-Seok Kim and **Andreas Züfle** (2020). 'Semantically Diverse Path Search'. In: *IEEE International Conference on Mobile Data Management (MDM'20)(Acceptance Rate: 23%)*. pp. 69–78.
2. Fei, Xiqi, Olga Gkountouna, Dieter Pfoser and **Andreas Züfle** (2019). 'Spatiotemporal Bus Route Profiling using Odometer Data'. In: *Proceedings of the 27th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems (Acceptance Rate: 30%)*, pp. 369–378.
3. Teng, Xu, Yang, Jingchao, Joon-Seok Kim, Goce Trajcevski, **Andreas Züfle** and Mario A Nascimento (2019). 'Fine-Grained Diversification of Proximity Constrained Queries on Road Networks'. In: *Proceedings of the 16th International Symposium on Spatial and Temporal Databases (SSTD) (Acceptance Rate: 32%)*, pp. 51–60.
4. Snowdon, J., Olga Gkountouna, **Andreas Züfle** and Dieter Pfoser (2018). 'Spatiotemporal Traffic Volume Estimation Model Based on GPS Samples'. In: *Proceedings of the Fifth International ACM SIGMOD Workshop on Managing and Mining Enriched Geo-Spatial Data, GeoRich@SIGMOD 2018, Houston, TX, USA, June 15, 2018. (Acceptance Rate: 45%)*, pp. 1–6.
5. Truong, R., Olga Gkountouna, Dieter Pfoser and **Andreas Züfle** (2018). 'Towards a Better Understanding of Public Transportation Traffic: A Case Study of the Washington, DC Metro'. In: *Urban Science (Impact Factor: Not Available.)* 2.3, p. 65.
6. Gkountouna, Olga, Dieter Pfoser, Carola Wenk and **Andreas Züfle** (2017). 'A Unified Framework to Predict Movement'. In: *Advances in Spatial and Temporal Databases - 15th International Symposium, SSTD 2017, Arlington, VA, USA, August 21-23, 2017, Proceedings (Acceptance Rate: 38.4%)*, pp. 393–397.
7. Lin, E., Park, J. D. and **Andreas Züfle** (2017). 'Real-Time Bayesian Micro-Analysis for Metro Traffic Prediction'. In: *Proceedings of the 3rd ACM SIGSPATIAL Workshop on Smart Cities and Urban Analytics, Redondo Beach, CA, USA, November 7, 2017 (Acceptance Rate: 25.0%)*, 12:1–12:4.
8. Yang, G. and **Andreas Züfle** (2017). 'Spatio-temporal prediction of social connections'. In: *Proceedings of the Fourth International ACM Workshop on Managing and Mining Enriched Geo-Spatial Data, Chicago, IL, USA, May 14, 2017 (Acceptance Rate: 44%)*, 6:1–6:6.
9. **Züfle**, **Andreas**, Goce Trajcevski, Dieter Pfoser, Matthias Renz, Matthew T. Rice, Timothy Leslie, Paul L. Delamater and Tobias Emrich (2017). 'Handling Uncertainty in Geo-Spatial Data'. In: *33rd IEEE International Conference on Data Engineering, ICDE 2017, San Diego, CA, USA, April 19-22, 2017 (Acceptance Rate: 17.7%)*, pp. 1467–1470.

Defense Advanced Research Projects Agency (DARPA) Defense Sciences Office

Project Title: A ground-truth simulator for socio-spatial alternate worlds
GMU Grant: #204398
Award: HR00111820005
Role: Principal Investigator
Co-Principal Investigators: Pfoser, Dieter and Crooks, Andrew
Total Budget Amount: $1,544,290
Performance Period: 12/29/2017- 12/31/2020
Commitment per Year: 2 Summer Months. One Course Equivalent.
Proposal Status: Cooperative Agreement Fully Executed. Publications have been on hold until 06/28/2020 as request by the program office.

Project Related Publications

1. Kim, Joon-Seok, Hyunjee Jin, Hamdi Kavak, Ovi Chris Rouly, Andrew Crooks, Dieter Pfoser, Carola Wenk and **Andreas Züfle** (2020). 'Location-based Social Network Data Generation Based on Patterns of Life'. In: *IEEE International Conference on Mobile Data Management (MDM'20)(Acceptance Rate: 23%)*. pp. 158–167.
2. Kavak, Hamdi, Joon-Seok Kim, Andrew Crooks, Dieter Pfoser, Carola Wenk and **Andreas Züfle** (2019). 'Location-based social simulation'. In: *Proceedings of the 16th International Symposium on Spatial and Temporal Databases (SSTD) (Acceptance Rate: 32%)*, pp. 218–221.
3. Kim, Joon-Seok, Hamdi Kavak, Umar Manzoor, Andrew Crooks, Dieter Pfoser, Carola Wenk and **Andreas Züfle** (2019). 'Simulating Urban Patterns of Life: A Geo-Social Data Generation Framework'. In: *Proceedings of the 27th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems (Acceptance Rate: 21.1%)*, pp. 576–579.
4. Kim, Joon-Seok, Hamdi Kavak, Umar Manzoor and **Andreas Züfle** (2019). 'Advancing simulation experimentation capabilities with runtime interventions'. In: *2019 Spring Simulation Conference (SpringSim). (Acceptance Rate: 30%)*, pp. 1–11.
5. Kim, Joon-Seok, Dieter Pfoser and **Andreas Züfle** (2019). 'Distance-Aware Competitive Spatiotemporal Searching Using Spatiotemporal Resource Matrix Factorization (GIS Cup)'. In: *Proceedings of the 27th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems (Acceptance Rate: 31%)*, pp. 624–627.

National Science Foundation

Project Title: RAPID: An Ensemble Approach to Combine Predictions from COVID-19 Simulations
GMU Grant: #205128
Award: DEB-2030685
Role: Co-Principal Investigator
Principal Investigator: Anderson, Taylor
Total Budget Amount: $199,998
Performance Period: 05/15/2020 - 04/30/2021
Commitment per Year: 0.5 Summer Months
Proposal Status: Awarded
No project-related publications made at this time.

COS/VSE Seed Grant Program

Project Title: Calibrating Geosimulations to Fight COVID-19
GMU Grant: #183912
Role: Principal Investigator
Total Budget Amount: $13,000
Performance Period: 07/15/2020 - 10/15/2020
Commitment per Year: None
Proposal Status: Awarded
No project-related publications made at this time.

Pending Proposal Submissions

Project Title: CAREER: Prescriptive Analytics using Geosimulation
Sponsor: National Science Foundation
Role: Principal Investigator
Total Budget Amount: $449,417
Status: Pending

Other Proposals Submitted but Not Funded

Project Title: CRII: III: Representative Mining of Uncertain Spatial and Temporal Data
Sponsor: National Science Foundation
Role: Principal Investigator
Total Budget Amount: $173,314
Status: Declined.(2017) **NSF Panel Recommendation:** *Competitive*.

Project Title: CRII: III: A Simulation Framework for Location-Based Social Network Data
Sponsor: National Science Foundation
Role: Principal Investigator
Total Budget Amount: $175,000
Status: Declined. (2017) **NSF Panel Recommendation:** *Low Competitive*.

Project Title: III: Small: Modeling and Predicting Public Concerns Using Online Petition Data
Sponsor: National Science Foundation
Role: Co-Principal Investigator **Principal Investigator:** Zhao, Liang
Total Budget Amount: $500,000
Status: Declined (2018). **NSF Panel Recommendation:** *Low Competitive*.

Project Title: Building Artificial Neural Networks inspired by the Mammalian Hippocampus
Sponsor: GMU COS-VSE Collaborative Seed Grant
Role: Multi-Principal Investigator
Othter Multi-Principal Investigators: Ascoli, Giorgio
Total Budget Amount: $25,000
Status: Declined (2018).

Project Title: CAREER: Plausible Agent-Based Simulation for Location-Based Social Network Generation and Analysis
Sponsor: National Science Foundation
Role: Principal Investigator
Total Budget Amount: $447,698
Status: Declined.(2018) **NSF Panel Recommendation:** *Not Competitive*.

Project Title: CAREER: Reliable Data Mining in Uncertain Spatial Data
Sponsor: National Science Foundation
Role: Principal Investigator
Total Budget Amount: $436,881
Status: Declined.(2019) **NSF Panel Recommendation:** *Low Competitive*.

Project Title: III: Small: Quantifying Geospatial Language Expressions Using Games and the Crowd with a Purpose
Sponsor: National Science Foundation
Role: Co-Principal Investigator **Principal Investigator:** Pfoser, Dieter
Total Budget Amount: $499,250
Status: Declined.(2020) **NSF Panel Recommendation:** *None*.

Conference and Other Scholarly Presentations (since 2016)

1. **Züfle**, **Andreas** (15th July 2020a). *A ground-truth simulator for socio-spatial alternate worlds (GT-S3) GMU Team Presentation. DARPA Ground Truth Final PI Meeting. Arlington, VA.*
2. **Züfle**, **Andreas** (3rd July 2020b). *Managing Uncertainty in Evolving Geo-Spatial Data. Advanced Seminar at the 21st IEEE International Conference on Mobile Data Management, Versaille, France. (held remotely).*
3. **Züfle**, **Andreas** (2nd Mar. 2020c). *Reliable Location-Based Social Network Mining using Geo-Social Simulation. Invited Talk. Qatar Computing Research Institute, Hamad Bin Khalifa University, Doha, Qatar.*
4. **Züfle**, **Andreas** (29th Jan. 2020d). *Reliable Data Mining in Uncertain Data. Invited Talk. Technical University Dortmund, Germany.*
5. **Züfle**, **Andreas** (11th Dec. 2019a). *Location-Based Social Simulation, Jiangsu Training Group Presentation. Fairfax, VA.*
6. **Züfle**, **Andreas** (20th Nov. 2019b). *Geography and Geoinformation Science. Presented at Thomas A. Edison High School, Alexandria, VA, USA.*
7. **Züfle**, **Andreas** (5th Nov. 2019c). *Complete and Sufficient Spatial Domination of Multidimensional Rectangles. Spatial Gems Workshop co-located with ACM SIGSPATIAL 2019, Chicago, Illinois, USA.*
8. **Züfle**, **Andreas** (21st Aug. 2019d). *Fine-Grained Diversification of Proximity Constrained Queries on Road Networks. Paper Presentation at the 16th International Symposium on Spatial and Temporal Databases (SSTD) Vienna, Austria.*
9. **Züfle**, **Andreas** (20th Aug. 2019e). *Location-Based Social Simulation. Vision Paper Presentation at the 16th International Symposium on Spatial and Temporal Databases (SSTD) Vienna, Austria.*
10. **Züfle**, **Andreas** (19th Aug. 2019f). *Representative Query Answers on Uncertain Data. Paper Presentation at the 16th International Symposium on Spatial and Temporal Databases (SSTD) Vienna, Austria.*
11. **Züfle**, **Andreas** (15th Jan. 2019g). *A ground-truth simulator for socio-spatial alternate worlds (GT-S3) GMU Team Program Update. DARPA Ground Truth PI Meeting. Arlington, VA. (held remotely).*
12. **Züfle**, **Andreas** (17th Nov. 2018a). *Location-Based Social Simulation, GMU Training Group Presentation. Fairfax, VA.*
13. **Züfle**, **Andreas** (7th Nov. 2018b). *The SIGSPATIAL Special Newsletter. ACM SIGSPATIAL 2018 Business Meeting. Seattle, WA.*
14. **Züfle**, **Andreas** (6th Nov. 2018c). *Location-Based Social Simulation: Using Agent-Based Simulation to Simulate Location and Friendship. Keynote Talk at the 1st ACM SIGSPATIAL International Workshop on GeoSpatial Simulation (GeoSim 2018). Seattle, WA.*
15. **Züfle**, **Andreas** (19th Oct. 2018d). *Spatial Data Science: A Research Overview. Zhejiang Administration of Surveying, Mapping, and Geoinformation, GMU Training Group Presentation. Fairfax, VA.*
16. **Züfle**, **Andreas** (26th Sept. 2018e). *Spatial Privacy: Challenges and Opportunities. Invited Talk at the IEEE Conference on Privacy Aware Computing during HotPrivacy Day.*
17. **Züfle**, **Andreas** (12th Sept. 2018f). *Spatial Data Science: A Research Overview. GGS 900: Seminar Presentation. Hosted by Dr. Paul Houser. Fairfax, VA.*

18. **Züfle**, **Andreas** (20th June 2018g). *A ground-truth simulator for socio-spatial alternate worlds (GT-S3) Homework Presentation. DARPA Ground Truth Review Meeting. Arlington, VA.*

19. **Züfle**, **Andreas** (19th June 2018h). *A ground-truth simulator for socio-spatial alternate worlds (GT-S3) Project Update and Simulation Demonstration. DARPA Ground Truth Review Meeting. Arlington, VA.*

20. **Züfle**, **Andreas** (18th June 2018i). *A ground-truth simulator for socio-spatial alternate worlds (GT-S3) Project Update and Simulation Demonstration. DARPA Ground Truth GMU Site Visit. Fairfax, VA.*

21. **Züfle**, **Andreas** (13th Mar. 2018j). *Artificial Intelligence in Spatial Data Science. Invited talk at the Center for Neural Informatics, Structures, and Plasticity at Krasnow Institute at GMU. Hosted by Dr. Giorgio Ascoli. Fairfax, VA.*

22. **Züfle**, **Andreas** (9th Mar. 2018k). *Engineering Uncertain Heterogeneous Spatial Data for Traffic Prediction. Invited talk at the Department of Software Engineering at Iowa State University. Hosted by Dr. Goce Trajcevski. Ames, IA.*

23. **Züfle**, **Andreas** (19th Jan. 2018l). *A ground-truth simulator for socio-spatial alternate worlds (GT-S3) GMU Team Homework Presentation and Project Revision. DARPA Ground Truth Program Kick-Off Meeting. Arlington, VA.*

24. **Züfle**, **Andreas** (18th Jan. 2018m). *A ground-truth simulator for socio-spatial alternate worlds (GT-S3) Project Presentation. DARPA Ground Truth Program Kick-Off Meeting. Arlington, VA.*

25. **Züfle**, **Andreas** (8th Nov. 2017a). *The SIGSPATIAL Special Newsletter. ACM SIGSPATIAL 2017 Business Meeting. Redondo Beach, CA.*

26. **Züfle**, **Andreas** (7th Nov. 2017b). *Protecting User Privacy: Obfuscating Discriminative Spatio-Temporal Footprints. Paper Presentation at the 1st ACM SIGSPATIAL Workshop on Recommendations for Location-based Services and Social Networks (LocalRec 2017), Redondo Beach, CA.*

27. **Züfle**, **Andreas** (7th Nov. 2017c). *Real-Time Bayesian Micro-Analysis for Metro Traffic Prediction. Paper Presentation at the 3rd ACM SIGSPATIAL Workshop on Smart Cities and Urban Analytics (UrbanGIS 2017), Redondo Beach, CA.*

28. **Züfle**, **Andreas** (23rd Aug. 2017d). *Detection and Prediction of Natural Hazards using Large-Scale Environmental Data. Full paper presentation at the 2017 International Symposium on Spatial and Temporal Databases (SSTD), Arlington, VA.*

29. **Züfle**, **Andreas** (22nd Aug. 2017e). *Predicting the Evolution of Narratives in Social Media. Vision Presentation at the 2017 International Symposium on Spatial and Temporal Databases (SSTD), Arlington, VA.*

30. **Züfle**, **Andreas** and Goce Trajcevski (21st Apr. 2017). *Handling Uncertainty in Geo-Spatial Data. Tutorial at the 2017 IEEE International Conference on Data Engineering. San Diego, CA.*

31. **Züfle**, **Andreas** (8th Dec. 2016a). *The Future of the Geospatial Web. Invited Talk at the Geospatial Platform Workshop. Hosted by GeoPlatform. Washington DC.*

32. **Züfle**, **Andreas** (5th Dec. 2016b). *Managing Uncertainty in Spatial, Spatio-temporal and Social Media Data. Seminar Presentation at the Department of Computer Science, Hong Kong University, Hong Kong, China.*

33. **Züfle**, **Andreas** (16th Nov. 2016c). *Big Spatial Data. Presentation at the GMU GIS Day 2016, Fairfax, VA.*

34 **Züfle**, **Andreas** (23rd Sept. 2016d). *Mining Big Spatial Data. GGS 900: Seminar Presentation. Hosted by Dr. Dieter Pfoser. Fairfax, VA.*

35 **Züfle**, **Andreas** (15th Sept. 2016e). *Mining Big Spatial Data. Zhejiang Administration of Surveying, Mapping, and Geoinformation, GMU Training Group Presentation. Fairfax, VA.*

Courses Taught

Winter'12/13 — **Einführung in die Programmierung**
(Introduction to Programming, CS 101)
Taught at Ludwig Maximilian University of Munich
(`https://www2.dbs.ifi.lmu.de/cms/Einf%C3%BChrung_in_die_Programmierung_WS1415.html`)
Number of Students: **850**
(no course evaluations available)

Spring'16 — **GGS 787: Scientific Data Mining for Geo-informatics**
Number of Students: **22**
Teaching Rating (Q15): **4.29**
Course Rating (Q16): **3.82**
Other Ratings (Q1-Q14): **4.45**

Fall'16 — **GGS 590-004: GIS Algorithms**
Number of Students: **9**
Teaching Rating (Q15): **4.88**
Course Rating (Q16): **4.75**
Other Ratings (Q1-Q14): **4.75**

Spring'17 — **GGS 300: Quantitative Methods for Geographical Analysis**
Number of Students: **26**
Teaching Rating (Q15): **4.11**
Course Rating (Q16): **3.74**
Other Ratings (Q1-Q14): **4.36**

GGS 787: Scientific Data Mining for Geo-informatics
Number of Students: **21**
Teaching Rating (Q15): **4.68**
Course Rating (Q16): **4.68**
Other Ratings (Q1-Q14): **4.74**

Fall'17 — **GGS 300: Quantitative Methods for Geographical Analysis**
Number of Students: **27**
Teaching Rating (Q15): **4.24**
Course Rating (Q16): **4.00**
Other Ratings (Q1-Q14): **4.62**

GGS 399-009 / GGS 590-007: GIS Algorithms
Number of Students: **16**
Teaching Rating (Q15): **4.83**
Course Rating (Q16): **4.67**
Other Ratings (Q1-Q14): **4.62**

Spring'18 — **GGS 300: Quantitative Methods for Geographical Analysis**
Number of Students: **15**
Teaching Rating (Q15): **4.63**
Course Rating (Q16): **3.88**
Other Ratings (Q1-Q14): **4.44**

Courses Taught (continued)

Fall'18

- **GGS 650: Introduction to GIS Programming**
  Number of Students: **15**
  Teaching Rating (Q15): **4.70**
  Course Rating (Q16): **4.40**
  Other Ratings (Q1-Q14): **4.87**

- **GGS 399-009 / GGS 590-007: GIS Algorithms**
  Number of Students: **4**
  Teaching Rating (Q15): **5.00**
  Course Rating (Q16): **4.75**
  Other Ratings (Q1-Q14): **4.96**

Spring'19

- **GGS 210: Introduction to Spatial Computing**
  Number of Students: **6**
  Teaching Rating (Q15): **4.80**
  Course Rating (Q16): **4.80**
  Other Ratings (Q1-Q14): **4.88**

Fall'19

- **GGS 210: Introduction to Spatial Computing**
  Number of Students: **7**
  Teaching Rating (Q15): **5.00**
  Course Rating (Q16): **5.00**
  Other Ratings (Q1-Q14): **4.93**

- **GGS 400 / GGS 900: Colloquium GIScience**
  Number of Students: **25**
  Teaching Rating (Q15): **5.00**
  Course Rating (Q16): **5.00**
  Other Ratings (Q1-Q14): **4.94**

Projects, Theses, Dissertations, and Postdocs Supervised

Doctoral Dissertation Supervision (Completed)

First Name	Last Name	Degree Level	Degree Name	My Role	Graduation Date
Aisha	Sikder	PhD	Earth Systems and Geoinformation Sciences	Committee Director	Spring 2020
Xiaoyi	Yuan	PhD	Computational Social Science	Committee Member	Summer 2020

Doctoral Dissertation Supervision (In Progress)

First Name	Last Name	Degree Level	Degree Name	My Role	Status
Jonathon	Hathaway	PhD	Earth Systems and Geoinformation Sciences	Committee Director	Advanced to Candidacy
David	Marr	PhD	Earth Systems and Geoinformation Sciences	Committee Director	Advanced to Candidacy
Ahmed	Askar	PhD	Earth Systems and Geoinformation Sciences	Committee Director	In Progress
Leslie	Garza	PhD	Earth Systems and Geoinformation Sciences	Committee Director	In Progress
Tunaggina	Khan	PhD	Earth Systems and Geoinformation Sciences	Committee Director	In Progress
Erik	Seglem	PhD	Earth Systems and Geoinformation Sciences	Committee Director	In Progress
Xiqi	Fei	PhD	Earth Systems and Geoinformation Sciences	Committee Member	Advanced to Candidacy
Dan	Cheng	PhD	Earth Systems and Geoinformation Sciences	Committee Member	Advanced to Candidacy
Mengfei	Xin	PhD	Earth Systems and Geoinformation Sciences	Committee Member	In Progress
Brendan	Hurley	PhD	Earth Systems and Geoinformation Sciences	Committee Member	Advanced to Candidacy
Lori	Mandable	PhD	Earth Systems and Geoinformation Sciences	Committee Member	Advanced to Candidacy
Yun	Li	PhD	Earth Systems and Geoinformation Sciences	Committee Member	Advanced to Candidacy
Liming	Zhang	PhD	Earth Systems and Geoinformation Sciences	Committee Member	Advanced to Candidacy
Yang	Zhou	PhD	Computational Social Science	Committee Member	Advanced to Candidacy
Pamela	Kanu	PhD	Earth Systems and Geoinformation Sciences	Advisor	In Progress
Jack	Brandy	PhD	Earth Systems and Geoinformation Sciences	Advisor	In Progress

Postdoctoral Researchers Supervised

First Name	Last Name	Supervision Date	My Role	Status
Olga	Gkountouna	Jan. 2017 - Aug. 2019	Co-PI	Tenure-Track Assistant Professor at George Mason University, USA
Hamdi	Kavak	Apr. 2018 - Dec. 2019	PI	Tenure-Track Assistant Professor at George Mason University, USA
Umar	Manzoor	June 2018 - Dec. 2018	PI	Tenure-Track Assistant Professor at Hull University, UK
Chris Ovi	Rouly	Oct 2019 - May 2020	PI	Classified
Joon-Seok	Kim	Apr. 2018 - present	PI	Active
Hyunjee	Jin	Oct. 2019 - present	PI	Active

Master Thesis Supervision (Completed)

First Name	Last Name	Degree Level	Degree Name	My Role	Status
Erik	Seglem	MS	Geoinformatics and Geospatial Intelligence	Committee Director	Completed
Jodi	Deprizio	MS	Geoinformatics and Geospatial Intelligence	Committee Member	Completed
Adrienne	Torielli	MS	Geoinformatics and Geospatial Intelligence	Committee Member	Completed
Bryan	LeBlanc	MS	Geoinformatics and Geospatial Intelligence	Committee Member	Completed
Andrew	Ryan	MS	Geoinformatics and Geospatial Intelligence	Committee Director	Completed
Ryan	Delts	MS	Geoinformatics and Geospatial Intelligence	Committee Member	Completed
Benjamin	Feinsilver	MS	Environmental Science and Policy	Committee Member	Completed

Master Thesis Supervision (In Progress)

Rich	Austin	MS	Geoinformatics and Geospatial Intelligence	Committee Director	In Progress
Jonathan	Regan	MS	Geoinformatics and Geospatial Intelligence	Committee Member	In Progress
Colin	Spohn	MS	Geoinformatics and Geospatial Intelligence	Committee Member	In Progress
Michael	Dunning	Certif.	CERG Geospatial Intelligence	Advisor	In Progress
Brandon	Youngblood	Certif.	CERG Geospatial Intelligence	Advisor	In Progress
Alexandria	Tyner	Certif.	CERG Geospatial Intelligence	Advisor	In Progress

Undergraduate and High School Research Supervision

Robert	Truong	BS	Computer Science & Mathematics	Research Advisor	Completed
Trevor	McGough	BS	Geography	Research Advisor	Completed
Trevor	McGough	BS	Geography	Ind. Study Advisor	Completed
Renee	Li	High School	Aspiring Scientists Summer Internship Program 2017	Advisor	Completed
Katie	Zhang	High School	Aspiring Scientists Summer Internship Program 2017	Advisor	Completed
Jack	Snowden	High School	Aspiring Scientists Summer Internship Program 2017	Advisor	Completed
David	Park	High School	Aspiring Scientists Summer Internship Program 2017	Advisor	Completed
Eric	Lin	High School	Aspiring Scientists Summer Internship Program 2017	Advisor	Completed
Andy	Chen	High School	Aspiring Scientists Summer Internship Program 2020	Advisor	Completed
John	Pesavento	High School	Aspiring Scientists Summer Internship Program 2020	Advisor	Completed
Rayan	Yu	High School	Aspiring Scientists Summer Internship Program 2020	Advisor	Completed

Service Activities

Departmental, College and University Leadership

Name of Service Activity	Organization	Time	Role
Honor Committee	GMU	2016-now	Member
Aspiring Scientists Summer Internship Program (ASSIP) Mentor	GMU	Summer 2017, Summer 2020	Mentor
GGS Chair Search Committee	COS	2018-2019	Member
COS Faculty Chair Pro Tempore	COS	2018-now	Chair Pro Tempore
GGS Awards Committee	GGS	2016-2018, 2020	Member
Search Committee: Assistant/Associate Professor of Transportation Geography (Tenure-Track) (Position Number: F8786Z)	GGS	2016,2019	Member
Search Committee: Tenure-Track Assistant Professor, GIScience (Position Number: F137Az)	GGS	2017-2018	Member
Search Committee: Term Assistant Professor/Instructor (Position Number: F318Az)	GGS	2019	Member
Search Committee: Research Assistant Professor, Movement Analytics (Position Number: F090Az)	GGS	2016	Member
Search Committee: Postdoctoral Research Fellow, Urban Simulation (Position Number: F209Az)	GGS	2017,2019	Chair
Search Committee: Postdoctoral Research Fellow, Urban Simulation (Position Number: F208Az)	GGS	2017,2019	Chair

Departmental, College and University Leadership (cont.)

Name of Service Activity	Organization	Time	Role
GGS GIS Day Career Panel Organization	GGS	2016-2017	Organizer
GGS GIS Day Co-Organization	GGS	2016-2017	Co-Organizer
GGS Chair's Advisory Committee	GGS	2017-2020	Member
Transportation and Mobility Hackathon, GMU Student Team Mentor	Fairfax County and Virginia Department of Transportation	2017	GMU Student Team Mentor
Capital Data Summit Hackathon, GMU Student Team Mentor	Northern Virginia Technology Council	2018	GMU Student Team Mentor

Conferences Organized/Chaired

Conference Name	Location	Year	Role
28th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems (ACM SIGSPATIAL)	Seattle, Washington (virtual)	2020	Registration Chair
6th International ACM SIGMOD Workshop on Managing and Mining Enriched Geo-Spatial Data (GeoRich)	Portland, OR (virtual)	2020	Program Chair
27th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems (ACM SIGSPATIAL)	Chicago, Il	2019	Publicity Chair
1st & 2nd ACM SIGSPATIAL International Workshop on Spatial Gems (SpatialGems)	Chicago, Il Seattle, WA	2019, 2020	General Chair
1st & 3rd ACM SIGSPATIAL International Workshop on GeoSpatial Simulation (GeoSim)	Seattle, WA	2018, 2020	General Chair
25th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems (ACM SIGSPATIAL)	Seattle, WA	2018	Awards Committee
25th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems (ACM SIGSPATIAL)	Long Beach, CA	2017	Student Research Competition Co-Chair
The Asia Pacific Web (APWeb) and Web-Age Information Management (WAIM) Joint Conference on Web and Big Data	Beijing, China	2017	Tutorial Co-Chair
15th International Symposium on Spatial and Temporal Databases (SSTD)	Arlington, VA	2017	Panel Chair
3rd International ACM SIGMOD Workshop on Managing and Mining Enriched Geo-Spatial Data (GeoRich)	San Francisco, CA	2016	Program Chair

Editorial Roles

Journal Name	Organization	Time	Role
SIGSPATIAL Newsletter	ACM SIGSPATIAL	2017-2020	Editor
Frontiers in Big Data: Special Topic “Big Spatial Data”	Frontiers in Big Data	2018-2020	Topic Editor
IJGI Special Issue ”Geo-Enriched Data Modeling & Mining”	Taylor & Francis	2019-2020	Co-Editor
IJGI Special Issue ”Spatial Databases: Design, Management, and Knowledge Discovery”	Taylor & Francis	2018-2020	Editor

Program Committee Membership

Short Name	Conference	Time	Number of Papers Reviewed Since 2016
ACM SIG-SPATIAL GIS	International Conference on Advances in Geographic Information Systems	2016-2020	29 (7+6+6+5+5)
CIKM	International ACM Conference on Information and Knowledge Management	2016, 2018, 2020	23 (9+8+6)
PAKDD	Pacific-Asia Conference on Knowledge Discovery and Data Mining	2020	7
DASFAA	International Conference on Database Systems for Advanced Applications	2020	7
WISE	International Conference on Web Information Systems Engineering	2020	5
MDM	IEEE International Conference on Mobile Data Management	2018	5
SSDBM	International Conference on Scientific and Statistical Database Management	2018	5
GeoAd	ACM SIGSPATIAL Workshop on Geoadvertising Meets Geosocial	2018	1
GeoRich	International ACM SIGMOD Workshop on Managing and Mining Enriched Geo-Spatial Data	2017-2018	3 (2+1)
ICDE	IEEE International Conference on Data Engineering	2016-2019, 2021	30 (9+8+5+3+5)
IWGS	ACM SIGSPATIAL Workshop on GeoStreaming	2017	1
IWSC	International Workshop on Smart Cities	2017-2018	4 (2+2)
LENS	ACM SIGSPATIAL Workshop on Analytics for Local Events and News	2017-2018	1 (1+0)
LocalRec	ACM SIGSPATIAL Workshop on Recommendations for Location-based Services and Social Networks	2018,2019	3 (1+2)

Program Committee Membership (cont.)

Short Name	Conference	Time	Number of Papers Reviewed Since 2016
SISAP	International Conference on Similarity Search and Applications	2017,2020	5 (2+3)
SSTD	International Symposium on Spatial and Temporal Databases	2017	7 (4+3)
SUM	International Conference on Scalable Uncertainty Management	2017-2018	4 (1+3)
Wintersim	Wintersim Simulation Conference	2019-2020	7 (2+5)
Springsim	Springsim Simulation Conference	2019	3

Journal Review Activities

Short Name	Journal	Time	Number of Papers Reviewed Since 2016
DAPD	Distributed and Parallel Databases	2017,2020	2
Geoinf	Geoinformatica Springer	2016-2020	9
IJGIS	International Journal of Geographical Information Science	2019-2020	3
IJGI	ISPRS International Journal of Geo-Information	2016-2020	11
Information	MDPI Information	2016	1
KAIS	Knowledge and Information Systems - Springer	2016-2018	4
TBD	Transactions on Big Data	2016	1
TKDE	IEEE Transactions on Knowledge and Data Engineering	2016-2020	14
TSAS	ACM Transactions on Spatial Algorithms and Systems	2016-2020	6
VLDB Journal	The International Journal on Very Large Data Bases	2016-2017,2020	3
Frontiers	Frontiers in Big Data	2019-2020	2
TSC	Transactions on Services Computing	2019	2
Sustainab.	MDPI Sustainability	2019	1
Env. and Planning B	Environment and Planning B: Urban Analytics and City Science	2019	1

Other Scholarly Activities

Organization	Activity	Time	Number of Items Reviewed
NSF	Panelist and Proposal Review (undisclosed programs)	2019	9