
CONTACT INFORMATION	3650 McClintock Ave, Los Angeles, CA 90089, United States	(323) 979-1693 sshaham@usc.edu
RESEARCH INTEREST	Privacy, Algorithmic Fairness, Machine Learning, Information Theory	
EDUCATION	University of Southern California, USA Ph.D. in Computer Science	2020 - Present
	University of Sydney, Australia Master of Philosophy in Information Technology	2017 - 2019
	<ul style="list-style-type: none"> Thesis Title: Location Privacy in the Era of Big Data and Machine Learning 	
	University of Warwick, UK Master of Science in Engineering Business Management	2014 - 2015
	<ul style="list-style-type: none"> Thesis Title: User Acceptance of Location-Based Mobile Applications 	
	University of Manchester, UK Bachelor of Engineering in Electrical and Electronics Engineering	2011 - 2014
	<ul style="list-style-type: none"> First Class Honours Thesis Title: Rescaling Digital Human Phantoms 	
HONORS & AWARDS	<ul style="list-style-type: none"> Amazon ML Fellowship University of Southern California Graduate Fellowship University of Sydney Postgraduate Award (APA) Norman-I Prize University of Sydney International Scholarship (tuition waiver plus \$ 26,000 per annum) University of Warwick Tuition Waiver Silver Medal in the National Mathematics Olympiad, IR Bronze Medal in the National Informatics Olympiad, IR Membership in National Elites Foundation, IR 	2022 2020 2019 2018 2017 2014 2010 2009 2009
PROFESSIONAL EXPERIENCE	Amazon , United States <i>Applied Scientist Intern</i> Fraud Detection Team	Summer 2023
	Facebook (Meta) , United States <i>Machine Learning/SWE Intern</i> Ads Fairness Team	Summer 2022
	<ul style="list-style-type: none"> Studied mitigation techniques to achieve fairness with respect to gender and race. Implemented a new loss function that improves miscalibration with respect to protected attributes. Improved subgroup calibration w.r.t gender in production-level Machine Learning models. Developed and landed codes in C, Python, Caffe2, and PyTorch. 	

CSIRO, Australia
Researcher

Aug 2018 - Aug 2020

- Collaborated with researchers at CSIRO on several projects related to Location Privacy.
- Published several conference and journal papers in top-ranked venues such as the IEEE International Conference on Computer Communications (INFOCOM) and IEEE Trans. on Knowledge and Data Engineering (TKDE).
- Helped industry partners to incorporate privacy-preserving algorithms in data sharing across the company.

InDebted, Australia
Data Scientist

Aug 2017 - Aug 2018

- Implemented Supervised Machine Learning models, such as Logistic Regression, Random Forest, and Decision Tree.
- Implemented Unsupervised Machine Learning algorithms such as K-means.
- Organized Relational Databases using SQL.

COMPUTER
SKILLS

- Programming Languages: Python, PyTorch, SQL, TensorFlow, Caffe2, C/C++, Matlab
- Libraries: Pandas, Numpy, Scikit Learn, Matplotlib, and Seaborn
- Math Skills: Linear, Non-linear, and Convex Optimization
- Visualization: Tableau and LATEX
- Cisco Certified Network Professional (CCNP) in Routing and Switching

CITATION
RECORD

Link to my Google Scholar Profile:
<https://scholar.google.com/citations?user=WnWN4NkAAAAJ&hl=en&oi=ao>

JOURNAL
PUBLICATIONS

1. **Shaham, S.**, Ghinita, G. and Shahabi, C., "Supporting Secure Dynamic Alert Zones Using Searchable Encryption and Graph Embedding" Submitted to the VLDB Journal, 2023.
2. **Shaham, S.**, Ghinita, G., Ritesh Ahuja, John Krumm and Shahabi, C., "HTF: Homogeneous Tree Framework for Differentially-Private Release of Large Geospatial Datasets with Self-Tuning Structure Height" in ACM Transactions on Spatial Algorithms and Systems (TSAS), 2022.
3. **Shaham, S.**, Dang, S., Wen, M., Mumtaz, S., Menon, V.G. and Li, C., "Enabling Cooperative Relay Selection by Transfer Learning for the Industrial Internet of Things" in IEEE Transactions on Cognitive Communications and Networking, Jan 2022.
4. Liu B, Ding M, **Shaham, S.**, Rahayu W, Farokhi F, Lin Z, "When Machine Learning Meets Privacy: A Survey and Outlook" in ACM Computing Surveys, March 2021.
5. **Shaham, S.**, Ding, M., Liu, B., Dang, S., Lin, Z. and Li, J., "Privacy preservation in location-based services: a novel metric and attack model" in IEEE Transactions on Mobile Computing (TMC), May 2020.
6. **Shaham, S.**, Ding, M., Liu, B., Dang, S., Lin, Z. and Li, J., "Privacy Preserving Location Data Publishing: A Machine Learning Approach" in IEEE Trans. on Knowledge and Data Engineering (TKDE), January 2020.

7. Wang, Z., Dang, S., **Shaham, S.**, Zhang, Z. and Lv, Z., "Basic Research Methodology in Wireless Communications: The First Course for Research-Based Graduate Students" in IEEE Access, vol. 7, pp. 86678-86696, 2019.
8. **Shaham, S.**, Ding, M., Kokshoorn, M., Lin, Z., Dang, S. and Abbas, R., "Fast Channel Estimation and Beam Tracking for Millimeter Wave Vehicular Communications," in IEEE Access, vol. 7, pp. 141104-141118, 2019.

CONFERENCE
PUBLICATIONS

1. **Shaham, S.**, Ghinita, G. and Shahabi, C., "Fair Spatial Indexing: A paradigm for Group Spatial Fairness" submitted to ACM SIGKDD International Conference on Knowledge Discovery & Data Mining (KDD), 2023.
2. **Shaham, S.**, Ghinita, G. and Shahabi, C., "Models and Mechanisms for Fairness in Location Data Processing" in Proceedings of the VLDB Endowment, 2023.
3. **Shaham, S.**, Ghinita, G. and Shahabi, C., "Differentially-Private Publication of Origin-Destination Matrices with Intermediate Stops" in 25th International Conference on Extending Database Technology (EDBT), 2022.
4. **Shaham, S.**, Ghinita, G., Ritesh Ahuja, John Krumm and Shahabi, C., "HTF: Homogeneous Tree Framework for Differentially-Private Release of Location Data" to appear in Proceedings of the 29th ACM SIGSPATIAL international conference on advances in geographic information systems, 2021.
5. **Shaham, S.**, Ghinita, G. and Shahabi, C., "An Efficient and Secure Location-based Alert Protocol using Searchable Encryption and Huffman Codes" in 24th International Conference on Extending Database Technology (EDBT), 2021.
6. **Shaham, S.**, Ghinita, G. and Shahabi, C., "Enhancing the Performance of Spatial Queries on Encrypted Data Through Graph Embedding" in IFIP Annual Conference on Data and Applications Security and Privacy (DBSec), pp. 289-309, Springer, Cham, June 2020.
7. **Shaham, S.**, Kokshoorn, M., Ding, M., Lin, Z. and Shirvanimoghaddam, M., "Extended kalman filter beam tracking for millimeter wave vehicular communications" in IEEE International Conference on Communications Workshops (ICC Workshops), pp. 1-6, June 2020.
8. **Shaham, S.**, Ding, M., Liu, B., Lin, Z. and Li, J., "Machine Learning Aided Anonymization of Spatiotemporal Trajectory Datasets" in IEEE Conference on Computer Communications Workshops (INFOCOM WKSHPs), pp. 1-6, April 2019.
9. **Shaham, S.**, Ding, M., Liu, B., Lin, Z. and Li, J., "Transition-Entropy: A Novel Metric for Privacy Preservation in Location-Based Services" in IEEE Conference on Computer Communications Workshops (INFOCOM WKSHPs), pp. 1-6, April 2019.
10. Zhang, L., Qian, Y., Ding, M., Ma, C., Li, J. and **Shaham, S.**, "Location Privacy Preservation Based on Continuous Queries for Location-Based Services" in IEEE Conference on Computer Communications Workshops (INFOCOM WKSHPs), pp. 1-6, April 2019.
11. **Shaham, S.**, Kokshoorn, M., Lin, Z., Ding, M. and Wu, Y., "RAF: Robust Adaptive Multi-Feedback Channel Estimation for Millimeter Wave MIMO Systems" in IEEE Wireless Communications and Networking Conference (WCNC), pp 1-6, Barcelona, Spain, April 2018.
12. Ma, Z.X., Zhang, **Shaham, S.**, Dang, S., and Hart, J., "Literature review of the communication technology and signal processing methodology based on the smart grid.", In Applied Mechanics and Materials. Trans Tech Publications 2015.

TECHNICAL
REVIEWER

- NeurIPS, KDD, Globecom, WCNC, ICC
- IEEE Transaction on Wireless Communications
- IEEE Transaction on Communications
- IEEE Transactions on Mobile Computing