

CONTACT INFORMATION	<p>EPFL STI IEL LIDIAP INF 136 (Bâtiment INF) Station 14 CH-1015 Lausanne</p> <p>(+41) 27-721-77-58  sina.sajadmanesh@epfl.ch  https://sajadmanesh.com </p>
RESEARCH SUMMARY	<p>My research interests lie at the intersection of privacy, deep learning, and graph analysis. More specifically, I use privacy enhancing technologies, such as differential privacy and federated learning, with graph representation learning algorithms, including graph neural networks, to make them more private, secure, and robust for real-world applications.</p>
EDUCATION	<p>École Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland, May 2019 – May 2023 Ph.D. in Electrical Engineering GPA: 5.7 / 6 Thesis: <i>Learning over Graphs: A Privacy-Preserving Approach</i> Adviser: Prof. Daniel Gatica-Perez Relevant Courses: Artificial Neural Networks (Deep Reinforcement Learning), Deep Learning for Natural Language Processing, Advanced Topics in Machine Learning</p> <p>Sharif University of Technology, Tehran, Iran, Sep 2014 – Sep 2016 M.Sc. in Information Technology Engineering GPA: 18.1 / 20 Thesis: <i>Link Prediction in Heterogeneous Multi-Layer Social Networks</i> Adviser: Prof. Hamid R. Rabiee Relevant Courses: Machine Learning, Complex Dynamical Networks, Performance Modeling of Computer Systems, Advanced Network Security, Database Security and Privacy</p> <p>University of Isfahan, Esfahan, Iran, Sep 2009 – Feb 2014 B.Sc. in Computer Software Engineering GPA: 16.19 / 20 (Last four semesters: 17.4 / 20) Project: <i>Design and Implementation of an Android App for Voice Control of Household Devices</i> Adviser: Prof. Ahamd R. Naghsh-Nilchi Relevant Courses: Data Structures, Algorithms, Probability and Statistics, Artificial Intelligence, Information Retrieval, Software Engineering, Databases, Operating Systems, Computer Networks</p>
RESEARCH EXPERIENCE	<p>Research Intern, March 2022 – May 2022 Brave Software, San Francisco, CA, USA (Remote) <ul style="list-style-type: none"> Working on federated reinforcement learning algorithms to build privacy-preserving recommendation systems for Brave's ads and news recommendation. </p> <p>Research Assistant, May 2019 – present Social Computing Group, Idiap Research Institute, Martigny, Switzerland <ul style="list-style-type: none"> Developing privacy-preserving graph neural network models using differential privacy to reduce the privacy risks of using graph representation learning algorithms in real applications. </p> <p>Research Assistant, Nov 2014 – May 2019 Data Science and Machine Learning Lab, Sharif University of Technology, Tehran, Iran <ul style="list-style-type: none"> Privacy-Preserving Deep Learning: Worked on a hybrid mobile-server learning architecture based on Siamese fine-tuning and split learning to make non-private pre-trained deep learning models privacy-preserving at the inference stage. Web Data Science: Analyzed a large-scale collection of recipes published on the web and their content, aiming to understand cuisines and culinary habits around the world. Social and Information Networks: Developed time-aware link prediction algorithms over heterogeneous social networks using recurrent neural networks and non-parametric machine learning. </p>
TEACHING EXPERIENCE	<p>Guest Lecturer, Fall 2017 Department of Computer Engineering, Sharif University of Technology, Tehran, Iran Course: Fundamentals of Programming (Python) Website: http://ce.sharif.edu/courses/96-97/1/ce153-12/</p> <p>Teaching Assistant EPFL <ul style="list-style-type: none"> Computational Social Media (Head TA), Spring 2021, Spring 2022 Sharif University of Technology <ul style="list-style-type: none"> Artificial Intelligence (Head TA), Spring 2017 Advanced Topics in Artificial Intelligence - Statistical Learning Theory, Spring 2016 Engineering Probability and Statistics, Spring 2016 </p>

University of Isfahan

- Artificial Intelligence, Fall 2013
- Advanced Computer Programming 2 - JavaFx and Android, Fall 2012
- Computer Programming - Java, Fall 2011
- Computer Programming - C++, Fall 2010

**INDUSTRIAL
EXPERIENCE****Big-Data Engineer**, Sep 2018 – May 2019

Sharif ICT Innovation Center, Tehran, Iran

- Responsible for building a native big-data processing platform using state-of-the-art technologies, such as Spark, Cassandra, JanusGraph, Elasticsearch, etc.

Software Engineering Intern, Summer 2012

Amin Computer Co., Esfahan, Iran

- Responsible for designing and developing an Android application for company's web-based human resource management system.

PUBLICATIONS

- [1] **Sina Sajadmanesh**, Ali Shahin Shamsabadi, Aurélien Bellet, and Daniel Gatica-Perez
GAP: Differentially Private Graph Neural Networks with Aggregation Perturbation
Technical Report, ArXiv e-prints, Mar 2022
- [2] **Sina Sajadmanesh** and Daniel Gatica-Perez
Locally Private Graph Neural Networks
ACM Conference on Computer and Communications Security (CCS 2021), Nov 2021
- [3] Seyed Ali Ossia, Ali Shahin Shamsabadi, **Sina Sajadmanesh**, *et al.*
A Hybrid Deep Learning Architecture for Privacy-Preserving Mobile Analytics
IEEE Internet of Things Journal, May 2020
- [4] **Sina Sajadmanesh**, Sogol Bazargani, Jiawei Zhang, and Hamid R. Rabiee
Continuous-Time Relationship Prediction in Dynamic Heterogeneous Information Networks
ACM Transactions on Knowledge Discovery from Data, Aug 2019
- [5] **Sina Sajadmanesh**, Jiawei Zhang, and Hamid R. Rabiee
NPGLM: A Non-Parametric Method for Temporal Link Prediction
Technical Report, ArXiv e-prints, Jun 2017
- [6] **Sina Sajadmanesh**, Sina Jafarzadeh, Seyed Ali Ossia, *et al.*
Kissing Cuisines: Exploring Worldwide Culinary Habits on the Web
International World Wide Web Conference (WWW 2017) Companion, Apr 2017
- [7] **Sina Sajadmanesh**, Hamid R. Rabiee and Ali Khodadadi
Predicting Anchor Links between Heterogeneous Social Networks
IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining, Aug 2016

**MEDIA
COVERAGE**

- **MIT Technology Review**, How Data Mining Reveals the World's Healthiest Cuisines, 3 Nov 2016
- **The Independent**, These are the world's most diverse cuisines, 11 Nov 2016
- **France 24**, Un algorithme compare les cuisines du monde en matière d'ingrédients et d'apports nutritionnels, 15 Nov 2016
- **Sciences et Avenir**, Les cuisines du monde passées au crible des big data, 14 Nov 2016

**TALKS AND
PRESENTATIONS****GAP: Differentially Private Graph Neural Networks with Aggregation Perturbation**

L3S Research Center (Remote), Aug 2022

Locally Private Graph Neural Networks

Graph Neural Networks User Group Meetup (Remote), Jul 2021

AI4Media Workshop on Explainability, Robustness and Privacy in AI (Remote), Jun 2021

Twitter Machine Learning Seminar (Remote), Jan 2021

Privacy-Preserving Deep Learning Over GraphsInformation Processing and Communications Lab, **Imperial College London** (Remote), Dec 2020

PROFESSIONAL SERVICES	<ul style="list-style-type: none"> • PC Member: ICLR Workshop on PAIR²Struct: Privacy, Accountability, Interpretability, Robustness, Reasoning on Structured Data (2022) • Reviewer: Artificial Intelligence Journal (2022) • Reviewer: IEEE Transactions on Big Data (2021) • Reviewer: ICLR Workshop on Distributed and Private Machine Learning (2021) • Reviewer: ACM Transactions on Intelligent Systems and Technology (2020) • Reviewer: Social Network Analysis and Mining Journal (2020) • Reviewer: World Wide Web Journal (2018)
HONORS AND AWARDS	<ul style="list-style-type: none"> • Travel Grant, for attending CISPA Summer School on Trustworthy AI, Saarbrücken, Germany, 2022 • Finalist, in CSAW Applied Research Competition for the best paper award in computer security, 2021 • PhD research assistantship, Computer Science, University of Illinois at Urbana-Champaign, 2018 (declined) • PhD studentship Computer Science, Hong-Kong University of Science and Technology, 2017 (declined) • Ranked 6th in nationwide university entrance exam for graduate studies in Artificial Intelligence, Iran, 2014 • Ranked 16th in ACM-ICPC regional programming contest, Asia region, University of Tehran, Iran, 2011 • Ranked 2nd in nationwide collegiate programming contest, University of Kashan, Iran, 2010 • Ranked among top 0.02% in Iran's nationwide university entrance exam for undergraduate studies, 2009
MEMBERSHIPS	<p>ACM Professional Member, 2020 – 2021</p> <p>ACM Student Member, 2011 – 2014</p> <p>ACM-ICPC Student Chapter, University of Isfahan, Esfahan, Iran, 2010 – 2012</p>
TECHNICAL SKILLS	<p><i>Programming Languages:</i></p> <p>Python, Java, C, C++, MATLAB, PHP, Javascript</p> <p><i>Information Retrieval & Analytics:</i></p> <p>Pandas, Elasticsearch, JanusGraph, Cassandra</p> <p><i>Machine Learning & Data Science:</i></p> <p>PyTorch, Tensorflow, PyTorch-Geometric, PyTorch-Lightning, Deep Graph Library, Scikit-Learn</p>
REFERENCES	<p>Prof. Daniel Gatica-Perez, Idiap Research Institute, EPFL Website: https://idiap.ch/~gatica Email: daniel.gatica-perez@epfl.ch</p> <p>Prof. Hamid R. Rabiee, Department of Computer Engineering, Sharif University of Technology Website: http://sharif.ir/~rabiee Email: rabiee@sharif.edu</p> <p>Prof. Hamed Haddadi, Dyson School of Design Engineering, Imperial College London Website: https://haddadi.github.io/ Email: h.haddadi@imperial.ac.uk</p> <p>Prof. Emiliano De Cristofaro, Department of Computer Science, University College London Website: https://emilianodc.com/ Email: e.decrisofaro@ucl.ac.uk</p>