

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. 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. 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 University of Isfahan</p>	

- 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**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 2020PROFESSIONAL
SERVICES

- 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

- **Finalist**, in CSAW Applied Research Competition for the best paper award in computer security, 2021
- **PhD admission**, Computer Science, University of Illinois at Urbana-Champaign, 2018 (declined)
- **PhD admission** Computer Science, Hong-Kong University of Science and Technology, 2017 (declined)
- **Ranked 3rd** in cumulative GPA among B.Sc. Computer Software Engineering students admitted for Fall 2009, University of Isfahan , 2014
- **Ranked 6th** in Iranian nationwide university entrance exam for graduate studies, field of Artificial Intelligence, among more than 100000 students, 2014
- **Ranked 15th** in Iranian nationwide university entrance exam for graduate studies, field of Computer Networks and Security, among more than 30000 students, 2014
- **Ranked 28th** in 18th National Computer Olympiad for University Students at Tarbiat Modares University , Tehran, Iran, 2013
- **Ranked 16th** in ACM-ICPC regional contest, Asia region, Tehran site, among more than 70 teams at University of Tehran , Tehran, Iran, 2011
- **Ranked 2nd** in nationwide collegiate programming contest among more than 70 teams at University of Kashan , Kashan, Iran, 2010
- **Ranked among top 0.02%** in Iran's nationwide university entrance exam for undergraduate studies., 2009

MEMBERSHIPS

ACM Professional Member, 2020 – 2021
 ACM Student Member, 2011 – 2014
 ACM-ICPC Student Chapter, [University of Isfahan](#), Esfahan, Iran, 2010 – 2012

TECHNICAL SKILLS

Programming:
 Python, Java, C, C++, MATLAB, PHP, Javascript

Information Retrieval & Analytics:
 Elasticsearch, JanusGraph, Cassandra

Data Science and Machine Learning:
 PyTorch, PyTorch-Geometric, PyTorch-Lightning, Deep Graph Library, Scikit-Learn, Pandas

REFERENCES

Prof. Daniel Gatica-Perez, Idiap Research Institute, EPFL
 Website: <https://idiap.ch/~gatica> Email: daniel.gatica-perez@epfl.ch

Prof. Hamid R. Rabiee, Department of Computer Engineering, Sharif University of Technology
 Website: <http://sharif.ir/~rabiee> Email: rabiee@sharif.edu

Prof. Hamed Haddadi, Dyson School of Design Engineering, Imperial College London
 Website: <https://haddadi.github.io/> Email: h.haddadi@imperial.ac.uk

Prof. Emiliano De Cristofaro, Department of Computer Science, University College London
 Website: <https://emilianodc.com/> Email: e.decrisofaro@ucl.ac.uk