

CONTACT INFORMATION	Rue Marconi 19 1920 Martigny Switzerland	(+41) 27-721-77-58 ☎ sina.sajadmanesh@epfl.ch ✉ <a href="https://sajadmanesh.com">https://sajadmanesh.com</a> 🏠
	RESEARCH SUMMARY 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.	
EDUCATION	<b>École Polytechnique Fédérale de Lausanne (EPFL)</b> , Lausanne, Switzerland, May 2019 – May 2023 Ph.D. in Electrical Engineering GPA: 5.7 / 6 <b>Thesis:</b> <i>Learning over Graphs: A Privacy-Preserving Approach</i> <b>Adviser:</b> Prof. Daniel Gatica-Perez <b>Relevant Courses:</b> Artificial Neural Networks (Deep Reinforcement Learning), Deep Learning for Natural Language Processing, Advanced Topics in Machine Learning	
	<b>Sharif University of Technology</b> , Tehran, Iran, Sep 2014 – Sep 2016 M.Sc. in Information Technology Engineering GPA: 18.1 / 20 <b>Thesis:</b> <i>Link Prediction in Heterogeneous Multi-Layer Social Networks</i> <b>Adviser:</b> Prof. Hamid R. Rabiee <b>Relevant Courses:</b> Machine Learning, Complex Dynamical Networks, Performance Modeling of Computer Systems, Advanced Network Security, Database Security and Privacy	
RESEARCH EXPERIENCE	<b>University of Isfahan</b> , Esfahan, Iran, Sep 2009 – Feb 2014 B.Sc. in Computer Software Engineering GPA: 16.19 / 20 (Last four semesters: 17.4 / 20) <b>Project:</b> <i>Design and Implementation of an Android App for Voice Control of Household Devices</i> <b>Adviser:</b> Prof. Ahamd R. Naghsh-Nilchi <b>Relevant Courses:</b> Data Structures, Algorithms, Probability and Statistics, Artificial Intelligence, Information Retrieval, Software Engineering, Databases, Operating Systems, Computer Networks	
	<b>Research Intern</b> , March 2022 – May 2022 <b>Brave Software</b> , San Francisco, CA, USA (Remote) <ul style="list-style-type: none"> <li>Working on privacy-preserving user representation learning and recommendation systems.</li> </ul> <b>Research Assistant</b> , May 2019 – present <b>Social Computing Group, Idiap Research Institute</b> , Martigny, Switzerland <ul style="list-style-type: none"> <li>Developing privacy-preserving graph neural network models using differential privacy to reduce the privacy risks of using graph representation learning algorithms in real applications.</li> </ul> <b>Research Assistant</b> , Nov 2014 – May 2019 <b>Data Science and Machine Learning Lab, Sharif University of Technology</b> , Tehran, Iran <ul style="list-style-type: none"> <li><b>Privacy-Preserving Deep Learning:</b> 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.</li> <li><b>Web Data Science:</b> Analyzed a large-scale collection of recipes published on the web and their content, aiming to understand cuisines and culinary habits around the world.</li> <li><b>Social and Information Networks:</b> Developed time-aware link prediction algorithms over heterogeneous social networks using recurrent neural networks and non-parametric machine learning.</li> </ul>	
TEACHING EXPERIENCE	<b>Guest Lecturer</b> , Fall 2017 Department of Computer Engineering, <b>Sharif University of Technology</b> , Tehran, Iran <b>Course:</b> Fundamentals of Programming (Python) <b>Website:</b> <a href="http://ce.sharif.edu/courses/96-97/1/ce153-12/">http://ce.sharif.edu/courses/96-97/1/ce153-12/</a>	
	<b>Teaching Assistant</b> <b>EPFL</b> <ul style="list-style-type: none"> <li>Computational Social Media (Head TA), Spring 2021, Spring 2022</li> </ul> <b>Sharif University of Technology</b> <ul style="list-style-type: none"> <li>Artificial Intelligence (Head TA), Spring 2017</li> <li>Advanced Topics in Artificial Intelligence - Statistical Learning Theory, Spring 2016</li> <li>Engineering Probability and Statistics, Spring 2016</li> </ul> <b>University of Isfahan</b> <ul style="list-style-type: none"> <li>Artificial Intelligence, Fall 2013</li> <li>Advanced Computer Programming 2 - JavaFx and Android, Fall 2012</li> </ul>	

- 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 Graphs**

Information Processing and Communications Lab, **Imperial College London**, Remote, Dec 2020

PROFESSIONAL  
SERVICES

- PC Member: **ICLR Workshop on PAIR<sup>2</sup>Struct: 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"> <li>• <b>Finalist</b>, in CSAW Applied Research Competition for the best paper award in computer security, 2021</li> <li>• <b>PhD admission</b>, Computer Science, University of Illinois at Urbana-Champaign, 2018 (declined)</li> <li>• <b>PhD admission</b> Computer Science, Hong-Kong University of Science and Technology, 2017 (declined)</li> <li>• <b>Ranked 3rd</b> in cumulative GPA among B.Sc. Computer Software Engineering students admitted for Fall 2009, University of Isfahan , 2014</li> <li>• <b>Ranked 6th</b> in Iranian nationwide university entrance exam for graduate studies, field of Artificial Intelligence, among more than 100000 students, 2014</li> <li>• <b>Ranked 15th</b> in Iranian nationwide university entrance exam for graduate studies, field of Computer Networks and Security, among more than 30000 students, 2014</li> <li>• <b>Ranked 28th</b> in 18th National Computer Olympiad for University Students at Tarbiat Modares University , Tehran, Iran, 2013</li> <li>• <b>Ranked 16th</b> in ACM-ICPC regional contest, Asia region, Tehran site, among more than 70 teams at University of Tehran , Tehran, Iran, 2011</li> <li>• <b>Ranked 2nd</b> in nationwide collegiate programming contest among more than 70 teams at University of Kashan , Kashan, Iran, 2010</li> <li>• <b>Ranked among top 0.02%</b> in Iran's nationwide university entrance exam for undergraduate studies., 2009</li> </ul>
MEMBERSHIPS	<p>ACM Professional Member, 2020 – 2021</p> <p>ACM Student Member, 2011 – 2014</p> <p>ACM-ICPC Student Chapter, <a href="#">University of Isfahan</a>, Esfahan, Iran, 2010 – 2012</p>
TECHNICAL SKILLS	<p><i>Programming:</i></p> <p>Python, Java, C, C++, MATLAB, PHP, Javascript</p> <p><i>Information Retrieval &amp; Analytics:</i></p> <p>Elasticsearch, JanusGraph, Cassandra</p> <p><i>Data Science and Machine Learning:</i></p> <p>PyTorch, PyTorch-Geometric, PyTorch-Lightning, Deep Graph Library, Scikit-Learn, Pandas</p>
REFERENCES	<p><b>Prof. Daniel Gatica-Perez</b>, Idiap Research Institute, EPFL  Website: <a href="https://idiap.ch/~gatica">https://idiap.ch/~gatica</a> Email: <a href="mailto:daniel.gatica-perez@epfl.ch">daniel.gatica-perez@epfl.ch</a></p> <p><b>Prof. Hamid R. Rabiee</b>, Department of Computer Engineering, Sharif University of Technology  Website: <a href="http://sharif.ir/~rabiee">http://sharif.ir/~rabiee</a> Email: <a href="mailto:rabiee@sharif.edu">rabiee@sharif.edu</a></p> <p><b>Prof. Hamed Haddadi</b>, Dyson School of Design Engineering, Imperial College London  Website: <a href="https://haddadi.github.io/">https://haddadi.github.io/</a> Email: <a href="mailto:h.haddadi@imperial.ac.uk">h.haddadi@imperial.ac.uk</a></p> <p><b>Prof. Emiliano De Cristofaro</b>, Department of Computer Science, University College London  Website: <a href="https://emilianodc.com/">https://emilianodc.com/</a> Email: <a href="mailto:e.decrstofaro@ucl.ac.uk">e.decrstofaro@ucl.ac.uk</a></p>