Sina Sajadmanesh

CONTACT INFORMATION

Rue Marconi 19
1920 Martigny
Switzerland

(+41) 27-721-77-58
sina.sajadmanesh@idiap.ch
https://www.idiap.ch/~sajadmanesh

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

École Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland, May 2019 – May 2023
Ph.D. in Electrical Engineering GPA: 5.75 / 6
Thesis Topic: *Learning over Graphs: From Social to Privacy-Preserving Methods*
Adviser: Prof. Daniel Gatica-Perez
Relevant Courses: Artificial Neural Networks (Deep Reinforcement Learning), Deep Learning for Natural Language Processing

Sharif University of Technology, Tehran, Iran, Sep 2014 – Sep 2016
M.Sc. in Information Technology Engineering GPA: 18.1 / 20
Thesis Topic: *Link Prediction in Heterogeneous Multi-Layer Social Networks*
Adviser: Prof. Hamid R. Rabiee
Relevant Courses: Machine Learning, Complex Dynamical Networks, Performance Modeling of Computer Systems, Advanced Network Security, Database Security and Privacy

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: *Design and Implementation of an Android App for Voice Control of Household Devices*
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

RESEARCH EXPERIENCE

Research Assistant, May 2019 – present
Social Computing Group, **Idiap Research Institute**, Martigny, Switzerland
- 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
- Private Deep Learning: Worked on a hybrid approach based on Siamese fine-tuning and split learning to make non-private pre-trained deep learning models privacy-preserving at the inference stage.
- Food and Cuisines: 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 Media Mining: Developed time-aware link prediction algorithms over heterogeneous social networks using recurrent neural networks and non-parametric machine learning.

TEACHING EXPERIENCE

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/

Teaching Assistant
Department of Computer Engineering, **Sharif University of Technology**, Tehran, Iran
- Artificial Intelligence (Head TA), Spring 2017
- Advanced Topics in Artificial Intelligence - Statistical Learning Theory, Spring 2016
- Engineering Probability and Statistics, Spring 2016

Faculty of Computer Engineering, **University of Isfahan**, Esfahan, Iran
- Artificial Intelligence, Fall 2013
- Advanced Computer Programming 2 - JavaFx and Android, Fall 2012
- Computer Programming - Java, Fall 2011
- Computer Programming - C++, Fall 2010

Sina Sajadmanesh

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 Engineer 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** and Daniel Gatica-Perez
Locally Private Graph Neural Networks
Technical Report, ArXiv e-prints, Oct 2020

[2] Seyed Ali Osia, Ali Shahin Shamsabadi, **Sina Sajadmanesh**, *et al*
A Hybrid Deep Learning Architecture for Privacy-Preserving Mobile Analytics
IEEE Internet of Things Journal, May 2020

[3] **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

[4] **Sina Sajadmanesh**, Jiawei Zhang, and Hamid R. Rabiee
NPGLM: A Non-Parametric Method for Temporal Link Prediction
Technical Report, ArXiv e-prints, Jun 2017

[5] **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

[6] **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

Honors and Awards

- **PhD admission** with fully-funded research assistantship to the Computer Science program from the University of Illinois at Urbana-Champaign., 2018
- **PhD admission** with fully-funded postgraduate studentship to the Computer Science and Engineering program from Hong-Kong University of Science and Technology., 2017
- **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-ICPC Student Chapter, University of Isfahan, Esfahan, Iran, 2010 – 2012
- Organized weekly programming contests.
- Instructed data structures and algorithms to freshmen.

Community Service

Journal Reviewer
World Wide Web (2018)
Social Network Analysis and Mining (2020)
ACM Transactions on Intelligent Systems and Technology (2020)

Sina Sajadmanesh

Media Coverage

- How Data Mining Reveals the World's Healthiest Cuisines, **MIT Technology Review**, 3 Nov 2016
- These are the world's most diverse cuisines, **The Independent**, 11 Nov 2016
- Un algorithme compare les cuisines du monde en matière d'ingrédients et d'apports nutritionnels, **France 24**, 15 Nov 2016
- If you are what you eat: regional cuisines have a major impact on health, **ReachMD**, 4 Nov 2016
- Les cuisines du monde passées au crible des big data, **Sciences et Avenir**, 14 Nov 2016

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, 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
Sharif University of Technology
Website: http://sharif.ir/~rabiee
Email: rabiee@sharif.edu

Prof. Emiliano De Cristofaro
University College London
Website: https://emilianodc.com/
Email: e.decristofaro@ucl.ac.uk

Prof. Hamed Haddadi
Imperial College London
Website: https://haddadi.github.io/
Email: h.haddadi@imperial.ac.uk