

# Sina Sajadmanesh

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## CAREER SUMMARY

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### Machine Learning Researcher, Software Engineer, Data Scientist

- **A self-motivated and diversely skilled professional** with 8 years of experience in designing, developing, and implementing machine learning models, AI solutions, and data-driven insights.
- **Adept in various machine learning frameworks, programming languages, and data analysis tools.** Passionate about leveraging cutting-edge technology to solve complex real-world problems and drive business growth.
- **A proven track record of success in research and development,** with several publications in top-tier conferences and journals. Demonstrated ability to collaborate effectively with cross-functional teams and lead projects from concept to completion.
- **A continuous learner with a growth mindset,** eager to contribute to the development of next-generation AI solutions and software that align with the strategic objectives and vision of a leading technology organization.

## SKILLS AND EXPERTISE

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### Programming and Scripting Languages:

Python (Expert), Java (Moderate), C++ (Moderate), Shell Scripting (Moderate), SQL (Moderate), LaTeX (Moderate)

### Machine Learning & Data Analysis:

PyTorch, PyTorch-Geometric, Tensorflow, Tensorflow-Lite, Scikit-Learn, Pandas, Numpy, Jupyter, Matplotlib

### MLOps & Related Technologies:

Weights & Biases, PyTorch-Lightning, Dask, Git, Linux, Docker

### Privacy-Enhancing Technologies:

Flower (Federated Learning), Opacus (Differentially Private ML), Auto-DP (Privacy Accounting)

## EDUCATION

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Ph.D. in Electrical Engineering (GPA: 5.75 / 6)

**École Polytechnique Fédérale de Lausanne (EPFL)**, Lausanne, Switzerland      May 2019 – Aug 2023 (Anticipated)

M.Sc. in Information Technology Engineering (GPA: 18.1 / 20)

**Sharif University of Technology**, Tehran, Iran      Sep 2014 – Sep 2016

B.Sc. in Computer Software Engineering (GPA: 16.19 / 20)

**University of Isfahan**, Esfahan, Iran      Sep 2009 – Feb 2014

## PROFESSIONAL EXPERIENCE

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Research Assistant

**Idiap Research Institute**, Martigny, Switzerland

May 2019 – Present

*Recruited as a doctoral student to contribute to **AI4Media**, a European research and innovation program focusing on ethical and trustworthy AI aiming to serve media and society. Developing privacy-preserving graph neural network (GNN) models using differential privacy to reduce privacy risks in real applications, such as recommendation systems and knowledge graphs.*

- Conducted high-quality and impactful research: **published two papers** in top computer security/privacy conferences, namely, **ACM CCS** and **USENIX Security**, and one under review, **received over 60 citations** since 2021 and delivered **more than 6 invited talks** at top institutions and companies, such as **Imperial College London**, **University of Illinois**, and **Twitter**.
- **Implemented locally private GNN models** using **PyTorch-Geometric** that enables online social networks to learn from their users' data without compromising their privacy. **Received over 38 stars and 13 forks** on **GitHub**.
- **Developed a differentially private GNN model** using **PyTorch-Geometric**, **Opacus**, and **Auto-DP** that enables privacy-preserving training and inference of GNNs. **Received over 20 stars and 1 fork** on **GitHub**.

- **Selected as a finalist** in [CSAW Applied Research Competition](#) for the best paper award in computer security in Europe.
- **Offered a travel grant** to attend [CISPA Summer School 2022 on Trustworthy Artificial Intelligence](#) in Germany.

Visiting PhD Student

**The Alan Turing Institute**, London, UK

Feb 2023 – Apr 2023

*Joined the [Safe and Ethical AI](#) group as a visiting PhD student to work on privacy-preserving ML algorithms on graphs. Worked on trustworthy machine learning on graphs at the intersection of privacy and robustness.*

- **Co-organized a workshop** on [Privacy and Fairness in AI for Health](#) with **11 invited speakers** from top research institutes and companies, such as Oxford, Microsoft, and DeepMind, and **over 60 attendees**.

Research Intern

**Brave Software**, San Francisco, CA, USA (Remote)

Mar 2022 – May 2022

*Recruited as a member of the research team to contribute to privacy-preserving machine learning research, aiming to improve Brave Browser's ads and news recommendation systems.*

- **Hand-picked to work on a research project** about federated reinforcement learning for privacy-preserving recommendation.
- **Developed an experimental framework** to evaluate the performance of federated neural bandits under client heterogeneity using [PyTorch](#) and [Flower](#) for server-side simulation and [Tensorflow-Lite](#) for mobile clients.

Big-Data Engineer

**Sharif ICT Innovation Center**, Tehran, Iran

Sep 2018 – May 2019

*Served in a part-time role as a member of an R&D team to develop a native big-data processing platform for the center.*

- **Conducted a comprehensive study on massively scalable graph databases**, such as [Neo4j](#), [OrientDB](#), and [Janus-Graph](#), by setting up, configuring, and benchmarking them on a computing cluster.
- **Developed a dashboard** to analyze and discover key insights from customers' data using [Kibana](#), [Elasticsearch](#), and [Cassandra](#).

Research Assistant

**Sharif University of Technology**, Tehran, Iran

Nov 2014 – May 2019

*Joined the [Data Science and Machine Learning Lab](#) as a master's student and continued as a research assistant after graduation. Worked on a range of research projects in the areas of privacy-preserving machine learning, web data science, and social and information network analysis.*

- Conducted high-quality and impactful research: **published four papers** in top-tier venues, including [IEEE IoTJ](#), [ACM TKDD](#), and [TheWebConf](#), **with over 350 citations** since 2016.
- 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.
- **Conducted large-scale data analysis** using a collection of recipes published on the web and their content, aiming to understand cuisines and culinary habits around the world. **Received media coverage** from prominent news outlets, such as [MIT Technology Review](#), [The Independent](#), and [France 24](#).
- **Developed time-aware link prediction algorithms** over heterogeneous social networks using recurrent neural networks and non-parametric machine learning.
- Received **research assistantship** from [IBM-ILLINOIS Center for Cognitive Computing Systems Research](#) (declined due to visa issues).

## PROFESSIONAL SERVICES

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### Organizing Committee Member

[Privacy and Fairness in AI for Health Workshop](#) (2023)

### Program Committee Member

[ACM Workshop on Wireless Security and Machine Learning \(WiseML\)](#) (2023), [ICLR PAIR2Struct Workshop](#) (2022),

### Scientific Peer Reviewer

[International Conference on Artificial Intelligence and Statistics \(AISTATS\)](#) (2023), [Learning on Graphs Conference](#) (2022), [Artificial Intelligence Journal](#) (2022), [IEEE Transactions on Big Data](#) (2021), [ICLR Workshop on Distributed and Private Machine Learning](#) (2021), [ACM Transactions on Intelligent Systems and Technology](#) (2020), [Social Network Analysis and Mining Journal](#) (2020), [World Wide Web Journal](#) (2018)