# Shayan Jalalipour

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## Summary

Skilled professional with advanced skills in machine learning and computer science research, working primarily as a research assistant. Developed and applied cutting-edge algorithms to enhance projects in computer vision and generative models, achieving recognition with published state-of-the-art research. Aims to leverage expertise in machine learning and generative modelling techniques to drive innovative solutions and operational success in highly technical environments.

## Education

**Portland State University** **2022 - 2026**
*PhD, Computer Science with a focus in Machine Learning, Reinforcement Learning, and Computer Vision*

**Portland State University** **2020 - 2022**
*Master's Degree, Computer science major, focus in Machine Learning*

**Portland State University** **2016 - 2020**
*Bachelor's Degree, Computer science Major*

## Work experience

**Portland State University** **Jun 2022 - Present**
*Machine Learning Research Assistant*
Conducted NSF-funded interdisciplinary research by applying and evaluating new machine learning algorithms using Python, PyTorch and other advanced ML tools to publish state-of-the-art research in computer vision, generative models, and ML.

**Handshake** **Oct 2025 - Present**
*Handshake MOVE Fellow*
- Reviewed and annotated large language model (LLM) code outputs in machine learning domains to identify, document, and mitigate behaviors compromising scientific validity, ensuring accuracy and reproducibility of model generated code.
- Applied advanced ML and code-review expertise to audit and annotate LLM generated source code. Identified edge case behaviors and reproducibility issues, strengthening safeguards for the scientific reliability of AI-assisted coding systems.

**Portland State University** **Sep 2021 - Present**
*Teaching Assistant*
Facilitated learning in computer science courses such as Reinforcement Learning, Virtual Reality, and Natural Language Processing by providing clear documentation and effective communication, supporting both students and professors.

**Vacasa** **Jun 2019 - Sep 2019**
*Data Scientist*
Collaborated with a team developing data analysis tools, creating and working with data pipelines, automating geospatial data analysis, as well as researching further applications of machine learning and Al algorithms.

**Portland State University** **Sep 2016 - Sep 2017**
*IT User Support*
Part of Maseeh college of engineering IT empowering user productivity in linux / ubuntu / redhat / windows environments. Supporting students, faculty, and staff with network connectivity and management, account security, and miscellaneous IT needs.

## Skills

- **Languages**: Python, SQL, C++, C, Java, Javascript, Scala, Prompt Engineering
- **Libraries and Frameworks**: Pytorch, CUDA, Tensorflow, Pandas, NumPy, Kubernetes, Docker, SKLearn, HuggingFace, GNNs
- **Platforms and Services**: Git, GCP, AWS, GIS, MySQL, MongoDB, OS-terminal coding
- **Techniques & Expertise**: Machine Learning, NLP, Statistical Knowledge, Data Visualization, Computer Vision, Deep Learning, Node.js, Transformers, Diffusion Models, Clustering, Multi-Modal Models, Reinforcement Learning, Large Language Models, LLMs, Data Mining

## Publications

- Deep Learning-Based Spatial Detection of Drainage Structures Using Advanced Object Detection Methods..2023 Fifth International Conference on Transdisciplinary Al (TransAl)
- Noisy-Defense Variational Auto-Encoder (ND-VAE): An Adversarial Defense Framework to Eliminate Adversarial Attacks..2023 Fifth International Conference on Transdisciplinary Al (TransAl)
- OSA-Diff: An Origin Sampling Based Adversarial Attack Using Diffusion Models..2025 19th International Conference on Semantic Computing (ICSC)