Shayan Jalalipour

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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.

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 AI 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

Publications

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