Wesley Khademi

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EDUCATION

Oregon State University Corvallis, OR
Ph.D. in Computer Science *Sep 2021 – June 2026 (Expected)*
Advisor: Fuxin Li
GPA: 4.0/4.0

California Polytechnic State University, San Luis Obispo San Luis Obispo, CA
B.S. in Computer Science, Minor in Mathematics *Sep 2016 – March 2021*
GPA: 3.93/4.0

RESEARCH EXPERIENCE

Deep Machine Vision Group Corvallis, OR
Graduate Research Assistant, **Professor Fuxin Li** *June 2021 - Present*

- Studying point-based methods and neural representations for 3D shape generation, completion, and reconstruction.

3D Vision Group San Luis Obispo, CA
Undergraduate Research Assistant, **Professor Jonathan Ventura** *Sep 2020 - June 2021*

- Studied scene representations such as multiplane images and Neural Radiance Fields (NeRF) for view synthesis.
- Extended NeRF for generating novel views of 360° outward facing scenes from casually captured images.

Charalampidis Research Group San Luis Obispo, CA
Undergraduate Research Assistant, **Professor Efstathios Charalampidis** *June 2020 - March 2021*

- Worked on numerical methods and physics informed neural network based approaches for solving nonlinear PDEs that model rogue waves.

Deep Microscopy Group San Luis Obispo, CA
Undergraduate Research Assistant, **Professor Jonathan Ventura** *Sep 2019 - Nov 2020*

- Developed self-supervised methods for denoising Poisson-Gaussian noise in low-light fluorescent microscopy and Poisson noise in low-dose CT scans.

PROFESSIONAL EXPERIENCE

Meta Reality Labs Research Redmond, WA
Research Scientist Intern, **Eye Tracking Research Team** *June 2023 - Dec 2023*

- Worked on problems related to 3D reconstruction and neural rendering.

Daimler Portland, OR
Software Engineering Intern, **Motion Planning Team** *June 2019 - Sep 2019*

- Developed a motion primitive-based local planner for a tractor-trailer system.

IBM Atlanta, GA
Software Developer Intern, **Security Analytics Team** *June 2018 - Sep 2018*

- Trained neural networks for classifying malicious activity on networks.

CONFERENCE PUBLICATIONS

W. Khademi and L. Fuxin, "Diverse Shape Completion via Style Modulated Generative Adversarial Networks" in *Conference on Neural Information Processing Systems (NeurIPS)*, 2023.

W. Khademi, S. Rao, C. Minnerath, G. Hagen, J. Ventura, "Self-Supervised Poisson-Gaussian Denoising" in *IEEE Winter Conference on Applications of Computer Vision (WACV)*, 2021.

Journal Publications

W. Zhu, **W. Khademi**, E. Charalampidis, P. Kevrekidis, "Neural Networks Enforcing Physical Symmetries in Nonlinear Dynamical Lattices: The Case Example of the Ablowitz-Ladik Model" in *Physica D: Nonlinear Phenomena*, 2022.

Poster Presentations

W. Khademi and J. Ventura, "View Synthesis In Casually Captured Scenes Using a Cylindrical Neural Radiance Field With Exposure Compensation" in *ACM SIGGRAPH*, 2021.

W. Khademi, C. Brechtel, J. Ventura, "Learning to Denoise Low-Dose CT Scans" in *Cal Poly SURP Symposium*, 2020.

Patents

A. Griffin, S. Tummalapenta, G. Givental, **W. Khademi**, A. Bhatia, "Multi-layered Image Encoding for Data Block," December 2021. US Patent US 11,201,726 B2.

G. Givental, **W. Khademi**, A. Bhatia, S. Tummalapenta, "Advanced Image Recognition for Threat Disposition Scoring," November 2020. US Patent US 10,832,083 B1.

Academic Experience

Course Grader: MATH 451: Numerical Analysis I	*Winter 2021*
Course Grader: CSC 428: Computer Vision	*Spring 2020, Fall 2020*

Courses and Skills

Graduate Courses: Machine Learning, Deep Learning, Computer Vision, Convex Optimization, Probabilistic Graphical Models, Algorithms & Data Structures, Numerical Linear Algebra, Differential Geometry

Undergraduate Courses: Statistics, Calculus, Linear Analysis, Combinatorics, Graph Theory, Game Theory, Numerical Analysis, Numerical Optimization, Artificial Intelligence, Computer Vision, Representation Learning

Programming Languages: Python, C++, C, Java, Matlab

Tools and Skills: PyTorch, TensorFlow, Keras, OpenCV, ROS, Matplotlib, NumPy

Awards

OSU Edith McDougall Scholarship	*June 2022*
OSU Provost's Distinguished Graduate Fellowship	*Sept. 2021*
OSU EECS Outstanding Scholar	*Sept. 2021*
Cal Poly Raymond, Thomas, and John Benton Memorial Scholarship	*July 2020*
Cal Poly Steve Gollery Memorial Scholarship	*June 2019*
Cal Poly Frederick W. Thoburn Jr. Scholarship	*July 2018*

Extracurricular Activities

AI Graduate Student Association (AIGSA)	Corvallis, OR
AI Application Support Program (AIASP) Mentor '22-'23	*Sept. 2021 - Present*
Cal Poly Robotics Club (CPRC)	San Luis Obispo, CA
Vice President '18-'19, President '19-'20, Project Lead '18-'21	*Sept. 2017 - March 2021*
Women Involved in Software and Hardware (WISH)	San Luis Obispo, CA
Mentor '20-'21	*Sept. 2019 - March 2021*