

JADIE ADAMS

Machine Learning Research Scientist

Salt Lake City, Utah, USA

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Areas of expertise: Machine & Deep Learning, Medical Image Analysis, Computer Vision, Probabilistic Modeling and Uncertainty Quantification, Statistical Shape Modeling

EDUCATION

PhD Candidate in Computing, Image Analysis Track

2019 - Spring 2024

University of Utah, Salt Lake City UT

(Expected)

Research Assistant in the Scientific Computing and Imaging Institute

GPA: 4.0

Select Coursework: Machine Learning, Deep Learning, Image Processing, Computer Vision, Visualization for Data Science, Advanced Algorithms, Artificial Intelligence, Advanced Deep Learning for Image Analysis, Probabilistic Machine Learning, Image Analysis Seminar

BS in Mathematics with Honors Certificate

Westminster College, Salt Lake City UT

2014-2018

Minors in Computer Science and Physics

GPA: 3.93

EXPERIENCE

University of Utah, Scientific Computing and Imaging Institute

Graduate Research Assistant

2019 - Present

Conducted research in the [Elhabian Lab](#), specializing in Bayesian deep learning techniques for statistical shape modeling (SSM) from 3D medical images. Thesis objectives:

1. Quantifying model and data-based uncertainty in convolutional regression networks.
2. Advancing 4D spatiotemporal modeling for longitudinal and dynamic studies.
3. Pioneering unsupervised point cloud-based SSM deep learning techniques.

Collaborated with the orthopedics and cardiac research departments and served as a mentor for junior lab members. Primary contributor to the deep learning API in [ShapeWorks](#), an open-source user-friendly software package.

References:

[Dr. Shireen Elhabian](#) – Advisor and PhD Committee Chair, shireen@sci.utah.edu

[Alan Morris](#) – Senior Software Developer of ShapeWorks, amorris@sci.utah.edu

NASA Jet Propulsion Lab, ML & Instrument Autonomy Group

Machine Learning Research Intern

Summer 2022

Collaborated with a team of data scientists and cosmologists to develop a probabilistic machine learning model for cosmic microwave background recovery from full sky maps. Published and presented results at the 2023 *AAAI Conference* in the Innovative Applications of AI track.

Reference: [Steven Lu](#) – Principal Researcher and Internship Mentor, you.lu@jpl.nasa.gov

CaptionCall / Sorenson, Speech Sciences and Machine Learning Team

AI/Speech Scientist II

2018 – 2020

Machine Learning and Speech Processing Intern

Summer 2018

Designed and implemented ML/NLP algorithms to enhance automatic speech recognition for telephone captioning, resulting in software deployment and three awarded patents.

Reference: [David Thomson](#) – VP of Speech Sciences, DThomson@sorenson.com

University of Washington Bothell, [Division of Engineering & Mathematics](#)

NSF-REU Researcher

Summer 2017

Conducted research in Tiling Theory under the guidance Dr. Casey Mann during an NSF funded Math [REU program](#). Solved three long-standing open questions, resulting in a cover publication in [Mathematics Magazine](#) and presentations at the *SACNAS STEM Conference 2017 and Joint Mathematical Meetings 2018*.

Westminster College, [Institute for Mountain Research](#)

Undergraduate Student Research Assistant

Summer 2016

Contributed to data analysis efforts for avalanche safety education research in collaboration with Dr. Russel Costa. Outcomes were presented at the 2016 *International Snow Science Workshop* under the title: "[On the Interface of Snow and Human Sciences](#)".

SELECT PUBLICATIONS

Jadie Adams and Shireen Elhabian, "[Point2SSM: Learning Morphological Variations of Anatomies from Point Cloud](#)" *Preprint*. Accepted as a spotlight presentation at ICLR 2024.

Jadie Adams and Shireen Elhabian., "[Fully Bayesian VIB-DeepSSM](#)" *MICCAI Conference* (2023)

Jadie Adams and Shireen Elhabian, "[Can point cloud networks learn statistical shape models of anatomies?](#)" *MICCAI Conference* (2023)

Jadie Adams, Steven Lu, Krzysztof M Gorski, Graca Rocha, and Kiri L Wagstaff , "[Cosmic Microwave Background Recovery: A Graph-Based Bayesian Convolutional Network Approach](#)" *AAAI Conference on Artificial Intelligence* (2023)

Jadie Adams, Nawazish Khan, Alan Morris, and Shireen Elhabian, "[Learning Spatiotemporal Statistical Shape Models for Non-Linear Dynamic Anatomies](#)" *Frontiers in Bioengineering and Biotechnology Journal* (2023)

Jadie Adams and Shireen Elhabian, "[Benchmarking Scalable Epistemic Uncertainty Quantification in Organ Segmentation](#)" *UNSURE Workshop, MICCAI Conference* (2023)

Jadie Adams and Shireen Elhabian, "[From Images to Probabilistic Anatomical Shapes: A Deep Variational Bottleneck Approach](#)" *MICCAI Conference* (2022)

Jadie Adams, Nawazish Khan, Alan Morris, and Shireen Elhabian, "[Spatiotemporal Cardiac Statistical Shape Modeling: A Data-Driven Approach](#)" *STACOM Workshop, MICCAI Conference* (2022)

Jadie Adams, Riddhish Bhalodia, and Shireen Elhabian, "[Uncertain-DeepSSM: From Images to Probabilistic Shape Models](#)" *ShapeMI Workshop, MICCAI Conference* (2020)

PATENTS

David Thomson and **Jadie Adams**, "Training of Speech Recognition Systems" *US Patent 11,170,761* (2021)

David Thomson, **Jadie Adams**, and Kenneth Boehme "Training Speech Recognition Systems Using Word Sequences" *US Patent 10,388,272 and 10,672,383* (2020)

David Thomson, **Jadie Adams**, Jonathan Skaggs, Joshua McClellan, and Shane Roylance, "Transcription Generation from Multiple Speech Recognition Systems". *US Patent 10,573,312 and 10,971,153* (2020)

TEACHING AND MENTORING

Elhabian Lab Mentor	2021 – Present
Teaching Assistant: Graduate level Machine Learning and Image Processing	2020 – 2021
STEM Lab Tutor at Westminster College	2016 – 2018
Undergraduate Supplementary Instructor: Intro to Computer Science, Real Analysis, and Intro to Calculus	2016 – 2018

HONORS AND AWARDS

STAR Student Award (MICCAI)	2023
Best Oral Presentation (STACOM Workshop)	2022
NIH Travel Award (MICCAI)	2022
Best Paper Runner-Up (ShapeMI Workshop)	2020
NSF GRFP Honorable Mention	2020
ARCS Foundation of Utah Scholar	2019
Westminster College's Honorary Graduate in Mathematics	2018
Highest Score on the Putnam Exam at Westminster College	2017
Honorable Mention in COMAP's International Math Modeling Competition	2017
Mathematical Association of America Student Scholar Award	2017
Grace Hopper Celebration of Women in Computer Science Scholar	2017

TECHNICAL SKILLS

Expert in:	Python, PyTorch, TensorFlow, Java
Experience with:	MATLAB, C++, R, SQL, JavaScript
Tools and Packages:	Git, Conda, Slurm, Linux, CUDA, Bash, NumPy, Scikit-Image, SciPy, Matplotlib, Pandas, ParaView, D3, VTK, ITK