Fiona Victoria Stanley Jothiraj

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EDUCATION

Oregon State University 2023 — 2027
Doctor of Philosophy (PhD) in Artificial Intelligence GPA: 3.76/4.00
Area of Research: AI for Social Good, Applied AI/ML in Ecology
Honors: Outstanding Scholars Program

University of Washington Bothell 2021 — 2023
Master of Science in Computer Science and Software Engineering GPA: 3.90/4.00

PSG College of Technology, India 2015 — 2019
Bachelor of Engineering in Robotics and Automation Engineering GPA: 9.58/10.00

RESEARCH EXPERIENCE

Graduate Research Assistant Oct 2023 - present
Oregon State University
Advisor: Dr. Rebecca Hutchinson

- Research on plant pollination interactions over more than a decade of environmental change analyzed through statistical modeling techniques with sparse datasets
- Researched the effects of imperfect detection in species-distribution models (SDMs) and occupancy models
- Interdisciplinary research on species distribution model, demonstrating boosted regression tree's (BRT) performance when habitat sampling is centered on bird locations rather than surveyor locations

Research Intern June 2024 - Sep 2024
Micron Technology
Team: Product Yield Analysis, Advised by Seth Eichmeyer

- Led the design, development, and deployment of ML models to enhance wafer defect identification.
- Researched novel methods using deep learning and generative AI to detect multi-defects and anomalous patterns that occur during the semiconductor manufacturing and probe process
- Utilized SoTA conditional variational autoencoders (VAEs), diffusion models and vision transformers (ViT) for faster processing and high detection accuracy
- Presented the project impact and outcomes to the VP of Engineering.
- Recipient of the **Micron Innovation Award**, marking the first step toward patent filing

Graduate Research Assistant June 2022 - Jan 2023
UW Bothell: Computation Behavioral Modeling (CBM) Research Lab
Advisor: Dr. Afra Mashhadi

- Inspired by societal communication and behavior in social media, defined the research around the area of studying nostalgia or reminiscent behavior on social media using natural language processing (NLP)
- Built traditional NLP models for classifying nostalgic conversations on the Twitter platform
- Applied NLP feature strategies and implemented transformer models such as RoBERTa, DistilBert, ensemble models, and ensemble-feature models to improve detection accuracy to 0.96 (Micro F1-Score)
- Mentored two undergraduate students to prepare exhaustive amounts of Twitter data

PUBLICATIONS

[1] Shen Fang-Yu, **Stanley Jothiraj, Fiona Victoria**, Hutchinson Rebecca A, Hallman Tyler, Curtis Jenna R, and Robinson, W. Douglas. (2025). Species Distribution Model Performance Improves When Habitat Characterizations are Centered on Detected Individuals Instead of Observers. *[in-review]*

[2] **Stanley Jothiraj, F. V.**, & Mashhadi, A. (2024). Phoenix: A Federated Generative Diffusion Model. *Companion Proceedings of the ACM on Web Conference 2024 (WWW 2024)*

[3] **Stanley Jothiraj, F. V.**, Hong L., & Mashhadi, A. (2024) Nostalgia on Twitter: Detection and Analysis of a Large-Scale Dataset. *Proceedings of the Association for Information Science and Technology (ASIS&T 2024)*

[4] Fang-Yu Shen, **Fiona Stanley Stanley Jothiraj**, Tyler A. Hallman, Rebecca A. Hutchinson, W. Douglas Robinson. (2024). Does species distribution model performance improve when habitat sampling is centered on bird locations instead of surveyor locations? *American Ornithological Society Annual Meeting*
[5] **Stanley Jothiraj, F. V.**, & Mashhadi, A. (2022). Personalized Emotion Detection using IoT and Machine Learning. *arXiv preprint*
[6] **Stanley Jothiraj, F. V.** (2022). Time Series Prediction for Food Sustainability. *arXiv preprint*
[7] Shamsaddini, Vahid, **Stanley Jothiraj, Fiona Victoria**, Chen, Mandy, & Mashhadi, Afra. (2022). Empirical Dynamic Modelling of the Multi-Source Park Visitation Data. *Data for Policy Conference*]

INVITED TALKS

Flower Monthly [video] 2023

- Invited talk on 'Phoenix: A Federated Generative Dif'fusion Model' - world's first federated diffusion model
- Hosted by Dr. Nicholas Lane, Professor at the University of Cambridge, and co-founder of Flower Labs

MEDIA

• The Hindu	App for Plus Two Students	[article] 2015
• Deccan Chronicle	12th Standard Student Develops App for Engineering Aspirants	[article] 2015
• Business Standard	School Girl Develops App for TN Engg Aspirants	[article] 2015
• India.com	School Girl Develops Application for Tamil Nadu Engg Aspirants	[article] 2015

AWARDS

- **Micron Innovation Award** - Micron Technology 2024
- **Professional Development Award** - Oregon State University 2024
- **Outstanding Scholars Program** - Oregon State University 2023
- **Virtual Scholarship** - Grace Hopper Women in Computing Celebration 2022
- **Academic Excellence** (Ranked 1/80) - Robotics and Automation Engineering Association 2019
- **Monarch of the Month** - Individual contribution to TensorFlow quantization at Multicoreware 2019

SERVICE

Reviewer

- ACM Transactions on Knowledge Discovery from Data (TKDD) 2025
- International Conference on Learning Representations (ICLR) 2025
- DravidianLangTech Workshop @ NAACL Conference 2025
- AAAI International Conference on Web and Social Media (ICWSM) 2025
- Women in Machine Learning Workshop (WiML @ NeurIPS) 2024
- IEEE Transactions on Mobile Computing (TMC) 2024
- IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI) 2024

INDUSTRY EXPERIENCE

Data Scientist June 2023 - Oct 2023
Harvard in Tech

- Volunteered as a thought leader in the 'Call for Action (CFA)' team
- Provided guidance and vision to build an NLP model that aims to detect unreliable news articles
- Influenced the executive leadership team to develop the roadmap of the CFA-Data Science team
- Delivered presentations on topics spanning fake news detection approaches, feature engineering methods, traditional models, and recent research findings
- Built transformer-based models for classifying news headlines from both open-source data and in-house curated data

Machine Learning Engineer June 2019 - Mar 2020
Multicoreware Inc, India

- Designed and developed an EV Quantization logic in TensorFlow GPU for quantization aware training and Tensorflow Lite inference of Deep Neural Networks
- Deployed the open-source product to production which is used for Synopsys Design Ware EV Processors
- Development using C++, Python, Intel Intrinsics, and Git
- Mentored peers on the quantization concepts and workflow of EV TensorFlow

Machine Learning Intern Dec 2018 - May 2019
Multicoreware Inc, India

- Skin Cancer Detection - Developed a custom Convolutional Neural Network (CNN) model to detect moles for potential skin cancer by training with gigabytes of clinical image data
- Audio Video LipSync - Implemented the Audio Video LipSync™ API in Intels' OpenVINO through a high-level C++ inference engine for 5x speedup
- Deployed the quality control LipSync tool for Over-the-top streaming service providers, using deep learning
- Setup the LipSync™ technology demo for the National Association of Broadcasters Show (NAB 2019)
- Enhanced the user experience with a GUI to create out-of-sync videos using PHP and Python

CERTIFICATIONS

2022 Introduction to TensorFlow for Artificial Intelligence, Machine Learning, and Deep Learning - Coursera
2022 Convolutional Neural Networks in TensorFlow - Coursera
2022 Natural Language Processing in TensorFlow - Coursera
2022 Introduction to Big Data - Coursera
2022 Taming Big Data with Apache Spark and Python – Udemy
2021 Amazon Web Services (AWS) - Machine Learning Specialty - Certified

SKILLS

- **Languages:** Python, R, C, C++, CUDA, MATLAB, SQL
- **A.I Tools:** TensorFlow, PyTorch, Diffusers, Transformers, OpenVINO, Keras, HuggingFace, Flower, Caffe, Scikit-learn, OpenCV, Kats, Pandas, NumPy, Jupyter, PySpark, Matplotlib, SciPy, Weights & Biases
- **R Libraries:** Dismo, Glmnet, Unmarked, DynamicSDM, Maxnet, Raster, Terra, Tidyverse, Nimble
- **Other Tools:** AWS (IoT Core, Sagemaker, Lambda, Kinesis, Glue, S3, SNS), Azure (IoT Hub, Stream Analytics, Function App), LaTeX, Git, Google Earth Engine, Docker