

JOSEPH LAVOND

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INTERNSHIPS

CISCO - SAN JOSE, CA

Ph.D. Intern

June 2023 - Aug 2023

- Lead research efforts to improve the diversity of samples produced by generative artificial intelligence
- Evaluated changes to prevent the occurrence of mode collapse in Generative Adversarial Networks
- Researching more efficient ways to train generative models with Differential Privacy

ELEVANCE HEALTH, INC. (FORMERLY ANTHEM) - INDIANAPOLIS, IN

Graduate Info Technology Intern

June 2022 - Aug 2022

- Implemented custom PyTorch semi-supervised Bayesian anomaly detection approach on Amazon Web Service (AWS) to identify up-coded Evaluation & Management (E/M) claims
- Received Impact award for end-of-summer technical presentation to senior management
- Participated in Agile Scrum model development process using Jira of a Fortune-30 company
- Created modeling data set pipeline for 60M row database using PySpark SQL in Jupyter on Kubeflow

BLUE CROSS BLUE SHIELD OF ARIZONA - PHOENIX, AZ

Actuarial Services Intern

Apr 2020 - Aug 2020

- Spearheaded the company-wide projection of membership for all lines of business
- Learned VBA to automate monthly updates to company forecasts within Microsoft Excel
- Automated data collection using process flows in SAS and SQL queries in Microsoft Access

CALIFORNIA POLYTECHNIC STATE UNIVERSITY - SAN LUIS OBISPO, CA

Frost Summer Research Program 2019

May 2019 - Sep 2019

- Manipulated the Surveillance, Epidemiology, and End Results (SEER) database, containing over 20 million cancer cases within the United States, using SAS
- Analyzed SEER data with KM and COX survival models using R
- Constructed an interactive R Shiny app for cancer patient use, taking demographic and diagnosis information as inputs, and providing a prognosis

EDUCATION

UNIVERSITY OF NORTH CAROLINA - CHAPEL HILL, NC

Doctor of Philosophy: **Statistics and Operations Research**

Aug 2020 - May 2025

- Funded through NSF-funded grant to add research to theory and application of networks

CALIFORNIA POLYTECHNIC STATE UNIVERSITY - SAN LUIS OBISPO, CA

Bachelor of Science: **Statistics**

Sep 2016 - Mar 2020

- 3.99 GPA, Summa Cum Laude, Academic Excellence Award
- Founder and Secretary of the Actuarial Society Club
- Member of Mu Sigma Rho, the US National Statistics Honors Society

PUBLICATIONS

UNIVERSITY OF NORTH CAROLINA - CHAPEL HILL, NC

Improving the robustness and privacy of neural networks under Dr. Yao Li

- FedDecay: Adapting to Data Heterogeneity in Federated Learning With Gradient Decay, Joseph Lavond, Minhao Cheng, Yao Li, *Under Review*
- Trusted Aggregation (TAG): Backdoor Defense in Federated Learning, Joseph Lavond, Minhao Cheng, Yao Li, *In NeurIPS Workshop on Federated Learning: Recent Advances and New Challenges, 2022*

SKILLS

COURSEWORK

- Machine Learning: Gradient Boosting, Bagging, Bootstrapping, and Regularization
- Deep Learning: Semi and Self-Supervised, and Transfer Learning for NLP and Computer Vision

PROGRAMMING LANGUAGES

- SQL (Snowflake, HUE, Microsoft Access)
- Python (PyTorch, SciKit-Learn, PySpark, Pandas, NumPy, Matplotlib)
- R (caret, tidyverse, ggplot2, dplyr, purr, stringr, shiny)
- Other: SAS, Microsoft Excel

Misc. Git (GitHub, Bitbucket), Linux (Cluster Computing), Vim, Project Jupyter, Kubeflow