

Joseph Lavond

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EDUCATION

University of North Carolina

Ph.D. Statistics and Operations Research

M.S. Statistics and Data Science

Chapel Hill, NC

Aug. 2020 – May 2025

Aug. 2020 – May 2024

California Polytechnic State University

B.S. Statistics

San Luis Obispo

Sep. 2016 – Mar. 2020

EXPERIENCE

Graduate Data Science Intern

Red Ventures

June 2024 – Aug. 2024

Fort Mills, SC

- Implemented offline model-based Q-Learning, a reinforcement learning algorithm, demonstrating a typical 5% increase in revenue per session, translating to an estimated \$5M in additional business revenue
- Developed and integrated over 6K lines of production code into a simulation environment focused on Markov Decision Processes for website traffic
- Established a streamlined pipeline leveraging historical production data to generate simulations, resulting in a substantial increase in both the quantity and complexity of simulations, leading to robust solutions

Ph.D. Intern

Cisco

June 2023 – Aug. 2023

San Jose, CA

- Evaluated changes to prevent the occurrence of mode collapse in Generative Adversarial Networks, where samples are not diverse and did not learn to cover the training distribution
- Developed a more efficient way to train generative models with differential privacy at scale, enabling statistical guarantees for the protection of private training data

Graduate Info Technology Intern

Elevance Health, Inc. (Formerly Anthem)

June 2022 – Aug. 2022

Indianapolis, IN

- Implemented custom PyTorch semi-supervised Bayesian anomaly detection approach on Amazon Web Service (AWS) to identify exaggerated claims by providers for services offered
- Received award for end-of-summer presentation to senior management
- Created modeling data set pipeline for 60M row database using PySpark SQL in Jupyter on Kubeflow

Actuarial Services Intern

Blue Cross Blue Shield

Apr. 2020 – Aug. 2020

Phoenix, AZ

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

Frost Summer Research Program

California Polytechnic State University

May 2019 – Sep. 2019

San Luis Obispo, CA

- Created an R Shiny app for cancer patient use, taking demographic and diagnosis information as input and providing estimated prognoses for various treatments based on KM and COX survival models.
- Manipulated with SAS the SEER database of 20M cancer cases

PUBLICATIONS

- Joseph Lavond, Minhao Cheng, and Yao Li. FedDecay: Adapting to Data Heterogeneity in Federated Learning with Gradient Decay. Under review.
- Joseph Lavond, Minhao Cheng, and Yao Li. Trusted aggregation (TAG): Backdoor defense in federated learning. *Transactions on Machine Learning Research*, 2024

SKILLS

Technical: Languages (*Python, R, SQL, SAS*), Machine Learning (*PyTorch, scikit-learn, Tensorflow, Keras, caret*), Analysis (*Pandas, NumPy, SciPy, Tidyverse*), Visualization (*Matplotlib, Seaborn, ggplot2*), Other (*Git, Linux*)

Soft: Communication (*data storytelling, technical documentation*), Adaptability (*agile methodologies, quick learner, flexible in dynamic environments*), Time Management (*prioritization, multi-tasking*), Teamwork (*collaborative projects, cross-functional teams, leadership skills*)