Joe Lavond

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EDUCATION

University of North Carolina — Chapel Hill, NC
Ph.D. Statistics and Operations Research — *Aug. 2020 – May 2025*
M.S. Statistics and Data Science — *Aug. 2020 – May 2024*

California Polytechnic State University — San Luis Obispo
B.S. Statistics — *Sep. 2016 – Mar. 2020*

EXPERIENCE

Graduate Data Science Intern — June 2024 – Aug. 2024
Red Ventures — *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 — June 2023 – Aug. 2023
Cisco — *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 — June 2022 – Aug. 2022
Elevance Health, Inc. (Formerly Anthem) — *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 — Apr. 2020 – Aug. 2020
Blue Cross Blue Shield — *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 — May 2019 – Sep. 2019
California Polytechnic State University — *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

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

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)*