JOSEPH LAVOND

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Summary

I live to learn daily and discover practical solutions to problems. I am dedicated to making lasting contributions and thrive in fast-paced environments that provide constant challenges and opportunities for growth.

Favorite Tools: SQL, Git, Python (pytorch, pyspark, sklearn, pandas, numpy, matplotlib), and R (tidyverse, caret, ggplot)

Education

University of North Carolina - Chapel Hill, NC

Doctor of Philosophy: **Statistics and Operations Research** *Aug 2020 - May 2025*

- Master's exams in Theoretical and Applied Statistics
- Advanced course work on Machine Learning, Deep Learning, and Non-Parametric Statistics

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

Professional Experience

University of North Carolina - Chapel Hill, NC

Research under Dr. Yao Li *Aug 2021 - Present*

- Participating in the development of methodology to improve the robustness of Neural Networks
- Developed defense threshold to prevent backdoor attacks in Federated Learning (for submission to ICLR, a machine learning conference, 2023)
- PyTorch implementation, training, and evaluation of many computer vision models (ResNet, VGG, etc.) on large databases (ImageNet, CIFAR, etc.) for object recognition research

NSF-Funded Research Training Group *Sept 2021 - Present*

- Funding through $2M grant to add research to theory and application of networks
- Actively participate in seminars and intensive courses to learn from leaders in network research

Graduate Teaching Fellow *Jan 2022 - May 2022*

- Solely responsible for teaching Introduction to Statistics and Data Science to 46 undergraduates
- Wrote 40 lectures, 3 exams, and a project to facilitate student learning and engagement

Graduate Teaching Assistant *Aug 2020 - Dec 2021*

- Taught and evaluated a introductory data science computer lab in Python for undergraduates.

Elevance Health, Inc. (Formerly Anthem) - Indianapolis, IN

Graduate Info Technology Intern (Remote) *June 2022 - Present*

- Implement Bayesian anomaly detection approach on Amazon Web Service (AWS) to Evaluation & Management (E/M) claims to identify potentially up-coded claims for down-coding
- Conduct bias and explain-ability analyses on resulting models to ensure that they perform similarly on different genders and ethnicities.
- Participate in Agile Scrum model development process using Jira of a Fortune-30 company
- Create modeling datasets using PySpark in Jupyter Notebooks on Kubeflow

Blue Cross Blue Shield of Arizona - Phoenix, AZ

Actuarial Services Intern (Remote) *Apr 2020 - Aug 2020*

- Took over the job responsibilities of an Actuary who left the team early into the internship, which included providing the organization with the projected membership for all lines of business
- Automated monthly updates to company forecasts alleviating the team from manual burden even after the duration of my internship by learning VBA in Microsoft Excel
- Automated data collection using process flows in SAS and SQL queries in Microsoft Access

California Polytechnic State University - San Luis Obispo, CA

Statistical Consultant *Sep 2019 - Aug 2020*

- Provided SAS mixed modeling analyses and coauthored NIH funded infant feeding study to better understand the relationships between early life factors and childhood obesity as part of a $2M grant (http://doi.org/10.1111/mcn.13185)
- Provided statistical support on generalized linear models for the theses of graduate students

Frost Summer Research Program 2019 *May 2019 - Sep 2019*

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