Vidit Tripathi

333043 351 Ferst Drive, Atlanta, GA 30332 | 940-594-3166 | t_vidit@icloud.com| US Citizen

Objective Statement

Electrical Engineering major with strong quantitative skills and hands on programming experience for a variety of applications. Interested in modeling, simulation, and statistical analysis of systems, especially with time series data. Looking to apply probability and statistics to a variety of fast paced and challenging problems.

Education

Georgia Institute of Technology | Atlanta, GA *August 2022 – Present*
Bachelor of Science in Electrical Engineering, Math Minor, GPA 3.80 Expected Graduation: Dec 2024

Skills

Programming: MATLAB, Python, C++, Java, SQL
Software: Autodesk EAGLE, GitHub, Microsoft Suite, Linux, Jenkins, Intel Quartus
Other: Sci-kit learn, NumPy, Keras, Pandas, VHDL

Experience

MIT Lincoln Laboratory: Energy Systems Group | Lexington, MA *May 2024 – August 2024*
Summer Research Intern

- Implemented change point detection algorithms on time series power meter data to identify switches from commercial to backup power.
- Modeled power meter data with an Ornstein-Uhlenbeck Stochastic Process to identify relevant statistics.
- Utilized support vector machine to classify back up power source for sections of power meter data.

Mathematical Neuroscience Group at Georgia Tech | Atlanta, GA *January 2024 – Present*
Student Researcher

- Conducted literature review on connectivity, dynamics, and computations in low rank recurrent neural networks.
- Simulated effects of pruning algorithms on dynamics and task performance of recurrent neural networks utilizing higher order statistics on a variety of connectivity structures.
- Proposed new biologically plausible pruning algorithm that preserves dynamics for low rank connectivity structures at up to 90% sparsity.
- Used spectral graph theoretical techniques to analytically show results about eigen spectrum of pruned connectivity structure.

Cadence Design Systems | Burlington, MA *May 2023 – August 2023*
Software Intern

- Worked on a team developing an application to aid system level hardware design using virtual platforms and hardware – software codesign.
- Wrote over 1000 lines of python scripts interacting with APIs to automate tasks for both internal and customer uses.
- Integrated two new features in Java eclipse application to automate parts of the design process for users.
- Removed dependency on boost C++ library in over 50,000 lines of code.

Relevant Coursework

Computational Foundations of Machine Learning: Statistics, Regularization, Bayesian Regression and Classification, Gaussian Processes, Support Vector Machines, Kernel Methods in general, Neural Networks, Constrained and Stochastic Optimization.
Random Signals and Applications: Introduction to random signals and processes with emphasis on applications in ECE. Includes basic estimation theory, linear prediction, and statistical modeling.
Probability and Statistics for ECE: Introduction to probability, random variables, distributions, estimation, confidence intervals, linear regression, and other tools for describing and managing uncertainty in electrical and computer engineering.
A Second Course in Linear Algebra: this course will cover important topics in linear algebra not usually discussed in a first semester course, featuring a mixture of theory and applications.
Optimization for ECE: An introduction to the fundamentals of optimization with a focus on algorithms and applications in signal processing, control systems, machine learning, and robotics.
Combinatorial Analysis: Combinatorial problem-solving techniques including the use of generating functions, recurrence relations, Polya theory, combinatorial designs, Ramsey theory, matroids, and asymptotic analysis.