Arvind Rathnashyam

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OBJECTIVE

A research position in applied mathematics. My research interests are in learning theory, optimization, and randomized numerical linear algebra.

EDUCATION

Rensselaer Polytechnic Institute — Troy, NY

Bachelor of Science in Mathematical Sciences (GPA 4.0/4.0) — *Expected May 2024*

Relevant Coursework(* indicates in progress, bold indicates graduate level): **Computational Linear Algebra***, **Intro to Optimization***, Mathematical Analysis*, Machine Learning from Data*, Probability Theory, Numerical Linear Algebra, Linear Algebra, Machine Learning and Optimization, Foundations of Analysis, Introduction to Complex Variables, Machine Learning for Autonomous Systems.

RESEARCH EXPERIENCE

Computer Science Department, RPI — Troy, NY

Undergraduate Researcher — *Fall 2022 - Fall 2023*

- Analyzed Deep Classifiers for Fine-Structure Classification Tasks and developed novel algorithms to classify tree graphs utilizing Markov Chains with Professor Malik Magdon-Ismail and Professor Radoslav Ivanov.
- Report

Computer Science Department, RPI — Troy, NY

Undergraduate Researcher — *Summer 2023 - Spring 2024*

- Develop theory for Robust Kernel Learning by Subquantile Minimization by studying a novel minimax formulation of robust learning solved by gradient descent with Professor Alex Gittens.

Cornell University Research Experiences for Undergraduates — Ithaca, NY

Undergraduate Researcher — *Summer 2023*

- Develop theory for Optimal Function Probing with a Bayesian Framework in the Data-Driven Discovery of Green's Functions with Christopher Wang and Professor Alex Townsend.
- Report
- Also worked on the upper bounds for the spectral norm of the pseudoinverse of non-standard normal matrices.
- Report

POSTERS

Rensselaer Polytechnic Institute Undergraduate Research Fair — *April 2023*

AWARDS

Rensselaer Leadership Award — *Fall 2021-Spring 2025*

Dean's Honor List — *Fall 2021 - Spring 2023*

COMAP MCM Honorable Mention (Top 22% of 8011 Teams) — *May 2023*

Cornell REU — *Summer 2023*

INDUSTRY EXPERIENCE

Huntington Ingalls Industries, Technical Solutions Division — Hanover, MD

Software Engineer Intern — *Summer 2022*

- Software Implementation of Signal and Track Processing, Applied Mathematics, and Visualization in C, Java, and Python in a Linux Environment.
- Updated Magnetic Declination Equations to decrease error to 0.1% leading to more precise course directions.

SKILLS

Highly Experienced: MATLAB, Python, LaTeX, Pytorch, Proof Writing

Experienced: C++, C, Java, Linux environment