Shyam Ravichandran

shyamr8502@gmail.com • (919)-996-0352 • https://homepages.math.uic.edu/~shyam/

EDUCATION

University of Illinois Chicago | **Chicago, IL**
Ph.D. in Mathematics | **GPA:** 4.0
Research Interests: Learning Theory, Convex Geometry, Discrete Probability, Theoretical Computer Science

Purdue University | **West Lafayette, IN**
B.S. in Applied Mathematics, Applied Statistics
Certificate: Applications of Data Science (Physics)

TEACHING, RESEARCH, AND MENTORSHIP

Undergraduate Research Assistant | Purdue University Department of Mathematics *Sep 2023 - Jan 2024*

- Worked on an applied system of PDEs to solve a version of the Inverse Scattering problem under the guidance of Dr. Isaac Harris, using advanced mathematics skills and numerical analysis in Python to solve and prove the solutions

Undergraduate Research Assistant | Purdue University Department of Physics *May 2021 - May 2022*

- Collaborated with Compact Muon Solenoid group at CERN to analyze large data sets for detecting and analyzing top quark collisions and decay to aid Dr. Andy Jung in his research of Top Quarks and other elementary particles
- Developed a proprietary Machine Learning model through TensorFlow and Keras in Python to identify and sort the Standard Model and Supersymmetry events from top and antitop quark collision and decay with an accuracy of 74%

Graduate Teaching Assistant | University of Illinois Chicago *Aug 2024 - Present*

- Teaching several sections of Introductory Calculus to undergraduate students, aiding students and instructors in class assignments and grading assessments

Directed Reading Program Mentor | University of Illinois Chicago *Jan 2025 - Present*

- Mentored multiple undergraduate students through various topics include Linear and Logistic Regression, Classification, Deep Learning, and Complex Analysis

PROFESSIONAL EXPERIENCE

Data Analytics Co-op | Rehlko (Formerly Kohler Energy) *Jan 2024 - Aug 2024*

- Acted as a Product Owner utilizing Excel, SAP, and PowerBI to redevelop and streamline an interactive financial dashboard that connects Kohler Executives and Management to data about active generators and provide high-level information about future earning potential, regional performance, and geo-location.
- Decreased error between true and expected value of field generators by 15% allowing supply-chain and management to better predict future usage and minimize waste

Data Science & Analytics Intern | Integrated Information Systems & Raytheon Technologies *May 2023 - Aug 2023*

- Utilized SQL, Excel, and PowerBI to build 2 interactive data dashboards that better connected RTX Manufacturing Teams, Executives, and Operators to their data for easier analysis and overview of supply chain operations
- Developed an ETL pipeline using SQL and SAP tools to create autonomous data reports that powered various data dashboards, decreasing time needed to access raw client data by over 50%

Software Engineering Intern | Map My Customers *Jun 2022 - Aug 2022*

- Developed and optimized an internal web application and API, utilizing React Native and TypeScript, to better connect Map My Customers Engineering, Design and Customer Success teams to internal client data allowing Customer Success members to update client data and create client-specific insights without help from the Engineering team

SKILLS & TECHNICAL TOOLS

Languages: Python, SQL, SAS, TypeScript, JavaScript, Java, React, C, HTML/CSS, Maple
Technologies: PowerBI, Excel, TensorFlow, Keras, Jupyter Notebook, Pandas, Matplotlib, Anaconda, VSCode

GRADUATE COURSES

Spring 2023 (Purdue):

- STAT512: Applied Regression Analysis

Spring 2024 (Purdue):

- STAT506: Statistical Programming And Data Management

Fall 2024:

- MATH514: Algebraic Number Theory
- MATH445: Topology
- MATH480: Applied Differential Equations

Spring 2025:

- MCS541: Computational Complexity
- MCS514: Analytic Number Theory
- MATH535: Complex Analysis

Summer 2025:

- Fourier Analysis of Boolean Functions (Independent Study)

Fall 2025:

- MCS548: Mathematical Theory for Artificial Intelligence
- STAT501: Probability Theory
- MCS584: Enumerative Combinatorics

Spring 2026 (TTIC/UChicago):

- TTIC31010/CMSC370: Algorithms
- TTIC31260: Algorithmic Game Theory

TEACHING

Fall 2024:

- Math 181: Calculus II (3 Sections)

Spring 2025:

- Math 181: Calculus II (2 Sections)
- Directed Reading Program Mentor, An Introduction to Statistical Learning: G.James, et.al

Summer 2025:

- Instructor for UIC Young Scholar's Program
- Directed Reading Program Mentor, Complex Analysis: Stein and Shakarchi

Fall 2025:

- Math 180: Calculus I (3 Sections)

Spring 2026:

- MCS421: Combinatorics (TA/Grader)
- MCS423: Graph Theory (TA/Grader)
- MCS471: Numerical Analysis (TA/Grader)