Ishaq Kothari

ikothari@oberlin.edu
github.com/ishaqkothari
ishaqkothari.github.io

EDUCATION

Oberlin College and Conservatory — Oberlin, Ohio
Bachelor of Arts (Expected May 2023), **GPA: 3.93** — *September 2020-Present*

- **Majors**: 3-2 Engineering, Mathematics; **Minor**: Computer Science
- **Relevant Coursework:**
  Mathematics: Linear Algebra, Multivariable Calculus, Real Analysis, Probability Theory, Group Theory
  Mathematics of Climate Modeling, Discrete Mathematics, Differential Equations
  Computer Science: Data Structures, Systems Programming, Human Computing Interaction, Probabilistic Modeling & Machine Learning, Cryptography
  Physics: Mechanics and Relativity, Electricity and Magnetism, Modern Physics, Classical Mechanics

SKILLS

Technical

- **Languages** - Python, C, C++, Java, Bash Scripting, Latex, Markdown, Mathematica, Racket
- **Machine Learning** - Bayesian Statistics, Neural Networks, Kernel Methods, Unsupervised Learning
- **Tools/Frameworks** - Pandas, Numpy, Scikit-learn, Eigen, Git, Vim, Linux

General

- **Language** - English, Spanish, Gujarati, Hindi

PROJECTS

- Modeling Global CO_2 Growth Rate with Land Loss Indicators using Lasso Polynomial Regression, Ridge Polynomial Regression, and Recurrent Neural Networks — *Winter 2021*
- Naive Bayesian Classifier Algorithm (with Gaussian and MLE options) written in C++. — *Autumn 2021*
- K-Nearest-Neighbors Classifier Algorithm (utilizing cross-validation) written in C++. — *Autumn 2021*

EXPERIENCE

Oberlin College — Oberlin, Ohio
Teaching Assistant — *September 2022-Present*

- Provided in-class instruction and hosted drop-in tutoring sessions for Calculus II under the direction of Professor Meredith Shea and Professor Nathan Gray.

Oberlin College — Oberlin, Ohio
Teaching Assistant — *September 2021-June 2022*

- Hosted regular drop-in sessions to provide supplementary instruction on various linear algebra topics under the direction of Professor Nathan Gray and Professor Chris Marx.

Oberlin College — Oberlin,OH
Research Assistant — *Fall 2022-Present*

- Developed Home Automation System using Unix based operating systems and InfluxDB to measure heat pump efficiency under the direction of Professor John Scofield.

Michigan Technological University — Houghton, Michigan
Research Assistant — *June 2022-Present*

- Researched declarative logic software development with Alloy and Spin for OECD *Rules as Code-* based project modeling Michigan's statutory expungement law MCL 780.621. Work on the project included comprehensive research on the statute through interviews with attorneys, judges, and paralegals, as well as utilizing linear temporal logic to mathematically model the statute. Furthermore helped research API functionality USDS, a metalanguge used to support underwater sensor data, funded by SBIR Award N68335-21-C-0187.

WOBC 91.5 Community Radio — Oberlin, Ohio
Webmaster — *January 2021-June 2022*

- Maintained website built using PHP, CSS and HTML for community radio station.

Rochester Table Tennis Coaching — Rochester, New York
Software Engineering Intern — *Winter 2020*

- Designed and configured a media server using Apache and NodeJS for a computer vision device to store and transfer live video feeds to a web server. Helped design the company website using Moodle.

AWARDS

- John Frederick Oberlin Scholarship — *Spring 2020*
- AP Scholar with Distinction — *Spring 2020*