RAHUL RAO
920 Rockbridge Road, Naperville, IL 60540
(H) 630-446-0726, rahul.seth.rao@gmail.com

EDUCATION

2018 - 2022 **NAPERVILLE NORTH HIGH SCHOOL (NNHS)** Naperville, IL

- GPA (Weighted): 4.0 / 4.0
- Naperville North High School Academic Honor Roll

EXPERIENCE

FIRSTEIGEN Naperville, IL

Artificial Intelligence (AI) startup; publisher of software (DataBuck) that autonomously validates data accuracy

Summer 2021 ***Summer Intern***

- Developed a time-series anomaly detection algorithm, GARCH (Generalized Autoregressive Conditional Heteroskedasticity) and programmed it in Python. The code was included in the core software (DataBuck) shipped to customers for detecting changes in retail customer traffic patterns inside a store

Summer 2020 ***Summer Intern***

- Implemented data dimensionality reduction using Principal Component Analysis (PCA) in Python, for mining vast troves of data for suspicious credit card and bank transactions

Mar-Aug, 2019 **RUSSIAN SCHOOL OF MATHEMATICS, NAPERVILLE, IL** Naperville, IL

Mathematics Tutor (Part-Time)

- Tutored children K-12 in math

AWARDS AND HONORS

- Top 5% nationally for the American Math Competition (AMC 12)
- American Invitational Mathematics Examination (AIME) 2x qualifier
- Awarded “State Scholar”, 2022-23, Top-5% academically in Illinois
- USA Mathematical Talent Search (USAMTS) Honorable Mention
- Qualified to be part of the American Regional Math League (ARML) Chicago Team
- Qualified for the International Olympiad of Metropolises (Moscow, Russia)
- State Math Team qualifier

EXTRA CURRICULAR ACTIVITIES

- Captain of High School Chess Team
  - Taught advanced lessons in chess principles and organized chess lessons for new team members
  - Coordinated chess team meetings
- High School Computer Science Club
  - Sub-Team Leader for Competitive Programming
  - Taught advanced mathematical concepts for solving competition problems using Python
- Naperville North High School Math Team
  - Member of the State Math Team
  - Studied and practiced advanced college-level mathematical concepts
- Science Bowl: Studied for and practiced for competitive quiz in Math and Physics
- Scholastic Bowl: Studied for and practiced for scholastic quiz sessions with the team
- Math Circle: Practiced for advanced math competitions like HMMT (Harvard, MIT Math Tournament). Participated in HMMT 2020

PERSONAL PROJECTS

- Handwritten-Digit Recognition
  - Developed a Feed Forward Neural Network using PyTorch to recognize and classify images of scribbled, handwritten numbers
  - Trained the Neural Network on the publicly available database of handwritten digits (MNIST dataset) with over 60,000 grayscale images of handwritten single numbers between 0 and 9 and 28×28 pixels

    - Program performed at 97% accuracy
- Digit Generator/Creator
    - Developed a Deep Learning model ("Generative Adversarial Network") using TensorFlow that learned the patterns of an individual's handwriting and used that to recreate their unique handwriting of digits
- Image Denoiser
    - Developed a Neural Network model ("Autoencoder") using TensorFlow, which learned from noisy images to auto recognize objects and their pixels, and mathematically enhance image quality. This is useful for images from satellites, medical devices, etc. which can be poor due to surrounding conditions
- Path-finding algorithm
    - Implemented Dijkstra's algorithm in Python for finding the shortest path between nodes of a graph. This technique is useful in optimization problems like pricing, inventory management, etc. It finds the shortest path in a multi-node, multi-path, graph network at half the time of a traditional approach

COPUTER SCIENCE PROFICIENCIES

- Python (PyTorch, Tensorflow, Pandas, NumPy), JavaScript, Java

SKILLS AND INTERESTS

- Soccer, Ultimate Frisbee, Table Tennis
- Baking
- Tutoring for math and computer science