

# RITVIK RANGARAJU

(609) - 921 - 4921 | rrangara@terpmail.umd.edu  
github.com/rrr-ritz | linkedin.com/in/ritvik-rangaraju

## Education

### University of Maryland

B.S. Computer Science; Minors: Robotics & Autonomous Systems, Spanish

College Park, MD

Expected Graduation: May 2026

**Relevant Coursework:** Deep Learning, Computer Vision, Data Science, Linear Algebra, Differential Equations, Multivariable Calculus, Algorithms, Data Structures, Computer Systems, Web Development

## Professional Experience

### Peraton Labs

June 2024 — August 2024

#### Software Engineering Intern

Basking Ridge, NJ

- Engineered an autonomous deep learning model training utility that improved location and network status prediction accuracy for active tactical assets by 20%, in support of DARPA project MINC (Mission Integrated Network Control).
- Implemented a pull-based, synchronous re-training scheme that reduced model update latency by 30%, ensuring high-fidelity predictions for moving assets.
- Designed customizable and extensible tool, significantly streamlining configuration time and operational efficiency.

### SEQ Technology

May 2023 — August 2023

#### Software Engineering Intern

New York, NY

- Created an intelligent data analysis and visualization dashboard that enables users to input queries in natural language and rapidly generate business-critical insights from vast and diverse internal datasets.
- Fine-tuned the DistilBERT language model, boosting recognition and interpretation accuracy by 15% for domain-specific queries in finance and human resources.
- Developed and containerized full-stack service primarily in React, Express.js, MongoDB, and EJS.

### Codivate

May 2020 — July 2022

#### Co-Founder & CTO

West Windsor, NJ

- Founded an ed-tech nonprofit and CS-tutoring platform that engages learners through interactive content.
- Drove vision, leading teams in software, curriculum, and marketing – reached 3500+ students across 10 chapters.
- Achieved widespread media recognition; awarded President's Volunteer Service Award (Gold) by President Biden.

## Projects

### Pulsar Classification with GAN-Augmented Hybrid CNN-LSTM Models

April 2024 — May 2024

- Built on the work of Connor et al. (2018) by developing a hybrid deep learning model using CNN and LSTM architectures to classify a wide variety of Pulsars – a type of Neutron star – based on signal information.
- Utilized Generative Adversarial Networks to generate synthetic data for underrepresented pulsar classes, significantly balancing the dataset and improving recall for those classes by 25% through augmented data.
- Applied noise reduction techniques including wavelet transforms, bandpass filtering, and spectral subtraction, reducing false positives by 15% and achieving 92% overall accuracy on a diverse validation set.

### Sudoklash | React, Express.js, MongoDB Atlas, Socket.IO

July 2023 — August 2023

- Launched real-time multiplayer Sudoku game that enhances traditional competitive gameplay through various features.
- Implemented client-server sync using Socket.IO, ensuring seamless updates to game state for players in real time.
- Developed and deployed responsive and high-performance full-stack web app using the MERN stack.

### Beetler | C, Bash

February 2023

- Created lightweight code analysis tool as extension of Computer Systems course project, capable of detecting undeclared variables, potential memory leaks, overly long lines, unmet variable conventions, and more.
- On average, helped 140+ students secure ~1.3% of their course grade through points associated with style.

## Technical Skills

**Languages:** Java, Python, C, JavaScript, HTML, CSS, Rust, OCaml, Bash, SQL, MATLAB, MIPS Assembly

**Libraries:** TensorFlow, PyTorch, Scikit-learn, NLTK, SpaCy, Seaborn, Pandas, NumPy, SciPy, Matplotlib, Socket.IO

**Technologies & Frameworks:** Git, Docker, Linux, Node.js, React, Express.js, Flask, Django, MongoDB, PostgreSQL