Akhil Reddy

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Education

Rutgers University • New Brunswick, NJ Sep 2020 – May 2024
Bachelor of Science: Computer Engineering | *Minors:* Physics, Mathematics GPA: 3.71/4.0

Highlighted Coursework

Data Structures & Algos, Computer Architecture, Operating Systems, Software Engineering, Numerical Modeling, C++ for Finance

Experience

Crewcial Partners LLC © - New York, NY Jan 2023 – May 2023
Software Engineering Intern

- Developed a back-office application for the investment banking team with proprietary client portfolio details. Worked with AngularJS and HTML to create a dynamic page with live pricing changes. Streamlined ROI factors by including pathways in C#.
- Improved the firm's internal API by collaborating with the Data Engineering team and worked with the Equity Research team to design and implement strategic software applications to drive client portfolios.

HJ Sims & Co. - Fairfield, CT Sep 2022 – Present
Software Engineering Intern

- Assisted with the migration away from a third party commissioner service for this boutique brokerage firm to help drive down costs and improve proprietary trader net payouts. Wrote SQL scripts to query the data and used python to link the employees.
- Improved the UI of the AUM dashboard to include live changes after trades. Worked through a set of chargebacks that were resulting in wrong commission calculations for various employees which helped the firm process trade data at a higher rate.

Jalali Lab @ Rutgers ECE - Piscataway, NJ Jun 2022 – Aug 2022
Undergraduate Research Assistant

- Designed algorithms that combatted the effect of speckle noise in SAR imaging by using compression based sensing. Trained a convolution neural network using PyTorch with a data set including images of lungs with pneumonia.
- Reconstructed distorted images using the neural network's ability to re-identify and sharpen images by passing them through the trained model. Was able to achieve 90% resolution of original, no-noise image from this method.

Bhattacharya Lab - New Brunswick, NJ Jan 2022 – May 2022
Undergraduate Research Associate

- Used Tensorflow Lite and Kotlin to design an android application that worked a one-stage detection model for coral reef. Included RGB testing on the backend using JScience to make conclusions about the health and survivability of the specimen.

Projects

Techfer - *Rutgers BITS Datathon Winner: Best Overall* – SQL, Tableau, ChartJS, PyTorch – GitHub Nov 2022

- Studied a data set about a country's happiness index and drew statistical conclusions using regression tests, paired t-tests, and chi-square tests. Recognized and came to conclusions using numerical data as well as visual inputs.
- Utilized MySQL to sift & clean the data set and Tableau to visualize partial tests compared to factors like GDP & alcohol consumption using heat maps, 3D bar plots, and scatter plots.
- Implemented a convolution neural network to project happiness from base conditions and a random forest classification to predict the h-index. Performed linear regression to identify key relationships and trends in developing vs. developed countries happiness.
- Used a cross-correlation dataset about Carbon (CO_2) emissions and ran inferential tests to understand how these emissions across the world have varying affects on happiness depending on country, time, and population characteristics.

Quantum Wavefunction Generator – NumPy, SciPy, Matplotlib, Numba – GitHub May 2022

- Implemented Schrodinger's equation in Python for a single particle in varying potentials and calculated 5+ wavefunctions for corresponding particles using functions from SciPy & Numpy.
- Plotted resulting potentials and dynamic wavefunctions in using Matplotlib and created a gif of evolutions over time. Achieved 60fps animation by overlapping two solutions, which was 30% faster than using an online numeric solver.

Skills

- **Programming languages:** Java, Python, C, C++, Web (HTML/CSS/JavaScript/Typescript), Go, Rust, oCaml, RISC-V
- **Tools & Frameworks:** Angular, React, Node.js, MongoDB, SQL, Git, GitHub, Docker, Flask, .NET Core, Postgres

Leadership

IEEE (Eta Kappa Nu) Honor Society - *Webmaster*, Rutgers Chapter Apr 2022 – Present

- Developed and maintained the main website and intranet portals in accordance with the organizations needs. Implemented a new student/professor-facing UI using Node & React.js that helped drive website traffic and eased navigation.

Society of Physics Students - *Treasurer*, Rutgers Chapter Sep 2020 – Present

- Tracked a $4,500 budget for events, drafted financial summaries, submitted quarterly fiscal packets, and monitored expenses for the school year. Organized 15+ events such as senior panels, research talks, and social affairs to garner interest in physics.