

# AKHIL REDDY

☎ (732) 666-7264 • ✉ akhil.reddy@rutgers.edu • in linkedin.com/in/akhilvreddy • 🌐 github.com/akhilvreddy • 🌐 akhilreddy.me

## EDUCATION

**Rutgers University • New Brunswick, NJ**

September 2020 – May 2024

*Bachelor of Science:* Computer Engineering

GPA: 3.74/4.0

*Minors:* Physics & Mathematics

## HIGHLIGHTED COURSEWORK

- **Computer Engineering:** Data Structures, Computer Architecture, Circuits I-II, Digital Logic Design, Network Security, Probability & Random Processes, Discrete Math, Computation for Engineers, Software Engineering, Linear Systems & Signals
- **Physics & Math:** Classical Mechanics I-II, Electromagnetism I-II, Modern Physics, Quantum Mechanics, Thermal Physics, Computer Experimentation, Linear Algebra, Multivariable Calculus, Partial Differential Equations, Classical Physics Lab I-II

## SKILLS

- **Programming languages:** Java, Python, Web (HTML/CSS/JavaScript/Typescript), C, Verilog, R
- **Software & Frameworks:** Git, GitHub, Android Studio, React, Matlab, Mathematica, Maple, Arduino, SQL, AWS, Linux, Excel

## EXPERIENCE

**Jalali Lab – GitHub** 🌐

May 2022 – Present

Machine Learning Researcher

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

**Javanmard Lab – GitHub** 🌐

Jan 2022 – July 2022

Android Application Developer

- Analyzed coral reef health by designing an android application that can detect and read RGB values from 70+ coral. Applied border detection in java by designing an algorithm that checks pixel shade of the coral against the background.
- Worked with YOLOv4 and trained AI to detect specific kind of coral using TensorFlow. Implemented an algorithm that analyzed how these coral react to different chemicals by using off-delay timers and 6 color sensors to further analyze health.

**Chandrasekhar Star Modeling**

August 2021 – December 2021

Undergraduate Research Assistant

- Investigated star temperature data to fit known differential equations & reworked. Utilized Mathematica to do variable based calculations to simplify our equations and used C to do number crunching.
- Proved correlation between data from Y. Eriguchi's paper to initially proposed equations by Chandrashekar in 1939 by showing that both of the numerical solutions aligned by 85%.

## PROJECTS

**NBA Neural Network – Java, Python, Pandas, PyTorch – GitHub** 🌐

July 2022

- Engineered a NBA odds predictor by training a neural network which resulted in outcomes that are comparable to highly reputed odd-makers such as DraftKings about 80% of the time.
- Utilized PyTorch to analyze statistics of 200+ past games and sifted through data provided by the NBA API using excel.
- Produced over/under odds by calculating and assigning corresponding weights to game statistics and included functionality to input live game scores, which would make the odds change instantaneously.

**Quantum Wavefunction Analysis – Mathematica, Jupyter, Numpy – GitHub** 🌐

May 2022

- Implemented Schrodinger's equation with python for a single particle in varying potentials and calculated 5+ wavefunctions for corresponding particles using fuctions from numpy and numba.
- Plotted resulting potentials and wavefunctions in Jupyter using matplotlib and created a gif of the wavefunction evolution over time using animation by overlapping two solutions, which was 50% faster than using an online solver.

## LEADERSHIP

**Society of Physics Students, Rutgers Chapter**

September 2020 – Present

Treasurer

- Organized 10+ events such as panels, research talks etc to garner interest in physics for middle and high school students and increased club engagement and participation by 30+ members.
- Track \$3,500 budget for events, draft financial summaries, submit fiscal end of semester packets, and manage bank account by monitoring expenses for the school year.

**First Year Integration**

September 2021 – Present

Program Leader

- Mentored 5 first-year students to promote success in engineering by hosting 1-1 meetings and planning engaging events. Assisted with the transition between high school and undergraduate life by giving them advice about school, life, and plans post-graduation.