Rahul Nagarajan

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Education

California State Polytechnic University	**August 2021 – Present**
Master of Science in Computer Science; GPA: 4.00	*Pomona, CA*
SRM Institute of Science and Technology	**July 2017 – May 2021**
Bachelor of Technology in Computer Science and Engineering; GPA: 3.42 (8.65/10)	*Ramapuram, India*

Experience

Research Assistant — **December 2021 - Present**

Cal Poly Pomona PolySec Lab — *Pomona, CA*

- Conducted in-depth research on EEG signals for cybersecurity applications, focusing on user authentication using machine learning techniques.
- Developed a comprehensive EEG-based authentication project, incorporating signal processing, feature extraction, feature selection, and an optimized Multi-Layer Perceptron (MLP) neural network.
- Led the research team in designing and implementing innovative machine learning models for EEG-based user authentication, showcasing strong technical leadership.
- Continually refined and enhanced the models to ensure maximum efficiency and accuracy, while keeping up-to-date with the latest advancements in the field.

Database Administrator Intern — **Jun 2019 - July 2019**

Aegis Info Business Solution Private Limited — *Chennai, India*

- Designed and implemented database schemas, tables, and views using PostgreSQL.
- Wrote efficient SQL queries to retrieve and manipulate data from databases.
- Collaborated with software developers to integrate Java applications with the PostgreSQL database.

Projects

Control Flow Graph Generator | *Java (Repo ⌝)* — **November 2021**

- Developed a Java program that takes pseudo-code as an input and generates a corresponding control flow graph.
- Implemented to handle nesting of conditional statements and loops.
- Overcame the challenge of connecting nodes in complex scenarios involving nested conditions and loops.

Resume Parser | *Python, Google Colab (Repo ⌝)* — **May 2022**

- Designed and developed a Python Program that summarizes resumes in either PDF or docx format.
- Leveraged a custom NLP Named Entity Recognition Model to extract relevant keywords with exceptional accuracy, resulting in an optimized and effective resume summary.

EEG Authentication | *Python, Jupyter Notebook (Repo ⌝)* — **April 2022**

- Developed a machine learning model for user authentication using EEG data, involving signal processing, feature extraction, and the application of a Multi-Layer Perceptron (MLP) feedforward neural network.
- Utilized ICA for artifact removal, windowing to preserve temporal dynamics, band power extraction for feature extraction, and SelectK-best for feature selection.
- Optimized the MLP neural network through hyperparameter tuning, resulting in an increase in authentication accuracy from 93% to 96%.

Technical Skills

Languages: C++, Python, Java, HTML/CSS, JavaScript, SQL
Developer Tools: VS Code, Eclipse, Jupyter Notebook, Google Colab, GanttProject, Balsamiq Wireframes, SQL Power Architect, pgAdmin; PostgreSQL

Extracurricular

- Completed Internshala's competitive Student Partner Program, serving as a student ambassador for SRM University.
- Earned a 5-star problem solver rating on HackerRank, with a certificate in basic problem-solving.
- Published research papers on American Sign Language detection and air quality prediction in respected journals.