ROHAN SINGH

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EDUCATION

Columbia University - School of Engineering and Applied Science — New York, NY
*Bachelor of Science in **Computer Science**, Minor in **Religion*** — *Expected: 2027*

- **Awards**: (Link) Egleston Scholar (Awarded to the top 1% of Columbia Engineering, $10,000 Stipend), Dean's List
- **Coursework**: Multivariable Calculus (Calc 3 & 4), Data Structures, Programming in Java, Linear Algebra
- **Clubs**: Columbia Engineers Without Borders, Columbia Venture Partners, Columbia Raas dance

EXPERIENCE

Columbia Engineering Systems Software Lab - (Github) — Sept. 2024 – Present
Machine Learning and Software Research Assistant — *New York, NY*

- Developing ACAI, an automated testing platform using **Python** to detect chatbot hallucinations.
- Improved document topic extraction accuracy by **30%** using asynchronous scripts for chatbot content evaluation.
- Testing ACAI with Columbia Travel & Expense to provide website data visualization and chatbot analytics.

Walmart Global Tech — Dec. 2022 – May 2024
Software Engineering and Computer Vision Intern — *Bentonville, AR*

- Created a mobile QR-code scanner app using **Java/API** and **React Native** to improve product management.
- Piloted app across **5** Walmart Mexico Distribution Centers (DCs) and used user feedback for app optimization.
- Collaborated with HR and DCs to align app features with operational needs and enhance **UI/UX**.

University of Arkansas SEEDS Cybersecurity Center - (Github) — March 2023 – April 2024
Cybersecurity and Artificial Intelligence Research Assistant — *Remote*

- Identified data trackers by **91%** with an OpenAI API-based Chrome extension using HTML, CSS, and JavaScript.
- Placed **2nd** at the 2024 Congressional App Challenge and received recognition from state senator.
- Presented at the IEEE GreenTech 2024 Conference and currently publishing in Frontiers of Big Data.

PROJECTS

Tuberculosis Detection using AI - (Project Write-Up) | *Python, Docker, Git* — Dec. 2022 – Aug. 2023

- Built deep learning model using TensorFlow, Keras, and scikit-learn to predict tuberculosis using cough audio.
- Partnered with the Bill & Melinda Gates Foundation and **30** institutions in the CODA TB DREAM Challenge.
- Attained model accuracy of **82%**, ranked **2nd** in the challenge and received authorship in the final manuscript.

Novel Artificial Pancreas - (Project) | *Python, MySQL, Swift, Amazon Web Services (AWS) IoT* — Jan. 2023 – July 2023

- Invented a novel artificial pancreas with a deep learning model, an AWS IoT server, and a MySQL database.
- Achieved model accuracy of **96%** and evaluated device efficiency using FDA-approved Matlab simulations.
- Patent-pending, published paper, and recognized by the United States Air Force and Regeneron Pharmaceuticals.

Website Development for Local Communities - (Github) | *HTML, CSS, JavaScript, PHP* — June 2021 – Oct. 2022

- Designed and modernized existing websites for **3** local communities and businesses.
- Worked directly with HOA boards to develop new websites using PHP, JS, HTML, CSS, and UI/UX skills.
- Awarded **2nd** for Website Design at the Future Business Leaders of America National Leadership Convention.

PUBLICATIONS & PREPRINTS

IEEE GreenTech 2024 - First Author - TraceMonitor: A Novel AI-Based Chrome Extension to Enhance User Awareness...
medRxiv - Consortium Authorship - Accelerating cough-based algorithms for pulmonary tuberculosis screening...
bioRxiv - First Author - Optimizing Glycemic Control in Type 1 Diabetic Patients using an AI-Based Artificial Pancreas...

TECHNICAL SKILLS, ADDITIONAL AWARDS, & INTERESTS

Languages: Java, Python, Swift, JavaScript, HTML, CSS, PHP
Tools: Amazon Web Services (AWS) IoT, MySQL, Git, Docker, Jira
Libraries & Frameworks: React Native, TensorFlow, pandas, Keras, scikit-learn, NumPy, Axios, Bootstrap, PyTorch
Awards: Regeneron International Science & Engineering Fair 4th Place Grand Award (top 300 out of 7 million students)
Interests: Baking Banana Bread, FC Barcelona, Tennis, Chess, Hot Chocolate, Journaling, Star Wars