

Arjun Challa

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Education

Urbana High School

Ijamsville, MD | 2023 - May 2027

Relevant Coursework: AP: Calculus AB-BC, Physics Mechanics, Microeconomics, Macroeconomics, Computer Science A, Statistics, Psychology, Literature

DE @ FCC: Virtualization and Cloud Essentials, Cloud System Administration

Skills

Languages: Python, HTML/CSS, SQL, PHP, R

Tools: PyTorch, Flask, Pandas, Git/GitHub, Blendr

Experience

Software Intern @ North Carolina State University

April 2025 – Oct 2025

- Developing a TensorFlow-based predictive model to forecast rainfall patterns and identify high-risk flooding zones in the Raleigh area.
- Collaborating with a team of Ph.D. researchers and undergraduate students to integrate geospatial, meteorological, and historical flood data for improved model accuracy.

TSRL Data Lab Member @ University of Southern California

March 2025 – Nov 2025

- Conducted hands-on project experiences analysing athlete data, building predictive performance models, and applying AI techniques to real-world training scenarios

Research Assistant @ American University

June 2025 – August 2025

- Conducted research under Dr. Hamid Semiyari on Mean-Variance Optimization, applying programming in R with the {quadprog} package to determine optimal asset allocations
- Made and presented a research report on the findings of optimal asset allocations.

AEOP ARMI BioFabUSA Intern @ Fort Detrick

July 2024 – August 2024

- Focusing on biofabrication and commercialization, created a presentation on utilizing stem cells, advanced manufacturing technologies, and organ creation
- Designed a solution for Gastroesophageal Reflux Disease. Developed a 3D printable solution and created a market analysis for prospective customers

Projects & Awards

Agrimpact | Python, Flask, NumPy, HTML/CSS, USDA QuickStats API

April 2025

- Developed a web application enabling small and rural farmers to compare crop profitability, risk, and government support using real USDA data.
- Implemented Monte Carlo simulations (1,000 runs) to assess yield and price variability, and presented results in a simple, interactive interface to support informed decision-making.
- <https://github.com/achalla18/agri-impact>

Inventory Product Software | Python, MySQL, Tkinter,

Nov 2023

- Designed and developed a custom inventory management system for a local business within three months, improving tracking accuracy and reducing overstock issues.
- Software was purchased by a local business, delivering a solution that enhanced operational efficiency.

Hi-Lite | Founder ... Used: JavaScript, HTML/CSS, Flask (Python),

May 2025 – Present

- Designing and developing a social media platform for high school students to showcase digital portfolios, feature projects, and receive skill endorsements.
- Developed a responsive UI/UX and currently implementing backend functionality to support user authentication, profile management, and project posting.

COVID-19 Pandemic Analysis | Python

Jan 2025

- Analyzed the spread and impact of COVID-19 in the Maryland region and evaluated the effectiveness of public health interventions using data. Got knowledge of epidemiological methods and data analysis techniques. Developed skills in using statistical software and predictive modeling using Python.

Computer Science Club | Vice-President

August 2024 – Present

- Led and managed club operations, overseeing fundraising initiatives and securing resources to support events and projects.
- Organized and coordinated workshops, competitions, and community-building activities to enhance members' technical skills

Gold President Service Award

June 2023

- Presented by the President of the United States for my volunteer work towards teaching students aged 7-12 STEM topics