

Arjun Challa

<https://github.com/achalla18> <https://arjun.is-a.dev/> arjun.c.1818@gmail.com

Education

Urbana High School

Ijamsville, MD | 2023 - May 2027

Coursework: AP: Calculus AB-BC, Physics, Mechanics & Electricity & Magnetism, Microeconomics, Macroeconomics, Computer Science A, US Gov, US History, World History, Statistics, Psychology, Literature

DE @ FCC: Cloud Visualization & Administration, Applied Calculus

Skills

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

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

Experience

Software Intern @ North Carolina State University

April 2025 – Nov 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.

Independent Tutoring Service | Python, Web Development (JavaScript, HTML/CSS)

Apr 2024 – Sept 2024

- Designed and taught a Python curriculum, guiding students aged 7-12 through programming fundamentals and collaborative project development.
- Mentored 15 participants in creating final projects addressing local community needs

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 President Joe Biden for my volunteer work towards teaching students aged 7-12 STEM topics