Mantavya Mahajan

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EDUCATION

Penn State University **University Park, PA**

B.S.: Computer Science, Mathematics

Minor: Business Fundamentals *Graduation: December 2025*

Relevant Courses: Discreet Math, Probability, Data Structure and Algorithms, OOPS GPA: 3.60/4.00

Digital Design, Computer Architecture, System Design, Database Systems, Dean's List (Fall/Spring 2022/2023) semesters

Finance, Supply Chains, Marketing, International Business Operations, Business Analysis

Technical Skills

Programming languages: Python, C, Java, C#, R, C++, MATLAB, TypeScript, JavaScript

Web Development: HTML, CSS, React, Angular, Node JS, PHP, jQuery, Bootstrap, Django, WordPress

Databases: MySQL, Derby Database, Firebase, PostgreSQL

Tools: Git/GitHub, Linux, Excel, Microsoft Office, Power BI

Machine Learning: TensorFlow, Keras, Scikit-learn, Pandas, NumPy, PyTorch

Other Skills: Statistics, Data Analysis, Agile, SQL, Docker, API, Redis, Selenium

Soft Skills: Problem-solving, Communication, Teamwork, Time Management, Adaptability, Leadership

Professional Experience

Alchem International **Delhi, India**

Full Stack Web Development Intern *May 2024 – Aug 2024*

- Developed and maintained web applications using HTML, CSS, JavaScript, Bootstrap, jQuery, and PHP, implementing new features and optimizing code, resulting in a 30% increase in site performance and reliability.
- Collaborated with cross-functional teams, conducted code reviews, and participated in daily stand-ups, achieving a 25% reduction in bugs and a 40% improvement in project delivery times while enhancing SEO strategies that increased website traffic by 20%.
- Used Git for version control, and JIRA for project management, and managed MySQL databases to ensure data integrity.

Penn State College of Engineering **State College, PA**

Research Assistant *Jan 2024 – Dec 2024*

- Researched solar max and min phenomena, collaborating with researchers from London, Netherlands, and Turkey.
- Developed an algorithm to detect solar events with 70% accuracy by manually collecting and analyzing 5,000 data points.

Penn State College of Information Science and Technology **State College, PA**

Research Assistant *Aug 2023 – May 2024*

- Contributed to OPARCS Lab at Penn State, focusing on open-source development and complex systems research.
- Collaborated with faculty and students to set up lab hardware, install critical software systems, and develop web resources.
- Improved code efficiency and readability by optimizing and documenting over 5000 lines to ensure clarity and maintainability.

Projects

AgriScience (*Django, MySQL, Predictive Machine Learning)* *Feb 2024*

Designed the full end-to-end AgriScience platform using Django and MySQL to optimize crop growth, predicting yield and profits for over 100 farms based on location, weather, farm size, and equipment. Integrated machine learning, APIs, and ChatGPT to provide a comprehensive growth plan tool for a hackathon project that supported data-driven farming.

DermAI (*Python, HTML, CSS, JavaScript, Keras library, Vision Processing)* *Dec 2023*

Developed a convolutional neural network for acne classification, trained on 10,000+ images to identify acne types and severity with a 70% success rate, reducing the need for professional dermatological diagnostics by 25%.

E-Commerce Website *(React, Node.js, Firebase Database, Stripe Payment Gateways)* *June 2024*

Built an e-commerce website using React for the frontend and Node.js for the backend, featuring product listings, user authentication, and cart management. Integrated Firebase for real-time data storage, managing 500+ products and supporting 100+ users during peak events. Implemented secure payment gateways through Stripe, with a 98% transaction success rate.

Leadership Management

Math 140/Phys 211/CMPSC Learning Assistant *Aug 2023 – May 2024*

- Led 100+ one-on-one tutoring sessions in Math 140 and Phys 211, earning 95% positive feedback for clarity and patience.
- Enhanced learning materials by streamlining content into more concise formats, improving efficiency for students and instructors.

EON-Head Mentor *Aug 2023 – May 2024*

- Mentored 30+ incoming Computer Science students at Penn State, boosting their retention rate by 15% through consistent guidance and resource sharing.
- Developed and documented best practice guides for first-year students, refining onboarding processes with proper documentation material for different majors, reducing unnecessary details by up to 60%.