

William Westerkamp

U.S. Citizen
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James Madison University (JMU), Harrisonburg, Virginia
Bachelor of Science, GPA: 3.2/4.0

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Expected Graduation: May 2025
Major: Computer Science (B.S.) | Minor: Mathematics
GitHub: <https://github.com/willweste>

WORK EXPERIENCE

Software Engineer Intern, Booz Allen Hamilton, McLean, Virginia **June 2024-Present**

- Developed a medical AI NLP chatbot web application using Python, Flask, React.js, and AWS Services, achieving 15% more accurate and reliable service functionality through RAG implementation.
- Architected the complete software solution with AWS and open-source technologies, adhering to project budget constraints.
- Collaborated within a scrum framework following agile practices in a team of 6, ensuring efficient progress through iterative development and feedback.

Software Engineer Intern, Chameleon Technology Partners, Oakton, Virginia **May 2023-June 2024**

- Refined skills in PHP, JavaScript, and MySQL by developing a custom Learning Management System (LMS) through Moodle.
- Integrated Professional Steps (LMS) directly with WordPress enabling SSO and WooCommerce.
- Efficiently managed Apache servers and MySQL databases, achieving a 20% decrease in relational throughput rates across platforms.
- Collaborated with a team of 3 developers and participated in weekly scrum meetings to meet deadlines and build the LMS.
- Contributed to Moodle's extensive 20,000-file codebase, focusing on our project's specific needs.

Machine Learning Engineer, Commonwealth Cyber Initiative Scholarly Research, Harrisonburg, Virginia **August 2022-May 2023**

- Developed an automated horizontal gaze nystagmus (HGN) test that received full funding for a Provisional Patent Application (PPA) from JMU and is predicted to prevent 12% of DUIs in America, potentially saving upwards of 30,000 lives per year. Patent Information: 63/632,716 · Filed Apr 11, 2024.
- Worked closely with two professors as a developer and created a fully working prototype in under 8 months.
- Developed skills using Python machine learning models, Face Detection and Recognition systems, IoT devices including Raspberry Pi and automotive embedded systems, and cloud computing services such as AWS.
- Efficiently decreased computational overhead cost by 50% utilizing proper architectural enhancements and optimizations for our facial detection and recognition model.

IT Support, JMU Graduate School, Harrisonburg, Virginia **August 2021-Present**

- Identify and report bugs in the CollegeNET environment, directly contributing to the resolution of long-standing network issues and improving performance by 15%.
- Utilize Excel to manipulate and format complex datasets, enhancing data readability and facilitating more efficient searching.

PROJECTS

Companion SaaS

- Developed a profitable Interactive NLP SQL Database Chatbot SaaS using open-source tools, attracting active users.
- Leveraged LangChain for agentic workflows and fine-tuned modern LLMs to achieve accurate text-to-SQL translation.
- Gained extensive experience in entrepreneurship, mastering the creation of a viable and profitable SaaS product.

IoT Security Camera Alert System

- Created a real-time security system with a 95% detection accuracy that will send push notifications on the current state of the monitored area using Python machine learning libraries such as OpenCV, YOLO, MediaPipe, and CVZone.
- Used Docker for seamless deployment and utilized AWS cloud infrastructure to host and run the security system, ensuring scalability and accessibility.
- The security system runs on a Raspberry Pi Zero W that stores recorded footage on the local file system.

STUDY ABROAD

Full-Stack Web Developer Intern, MacroActive, Auckland, New Zealand **June 2022-August 2022**

- Contributed to a 5,000-file codebase to develop and deploy an improved user registration system.
- Increased user registration engagement by 15% in 3 months using React, Typescript, Node.js, MySQL, and Docker.
- Transitioned to a scrum work system, participating in daily meetings and weekly presentations.
- Embraced a new culture and contributed to the team, helping to achieve a 5% sales increase over the summer.

AWARDS AND HONORS

- Presenter at the 2023 Systems and Information Engineering Design Symposium (SIEDS), receiver of the 2022 Commonwealth Cyber Initiative Scholarship, and winner of the 2019 Congressional App Challenge.