

# Liam J. McKane

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## PROFESSIONAL EXPERIENCE

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### Quality Engineer

*Alarm.com* | McLean, VA | *July 2022 - Present*

- Developed and implemented scripts in a Java testing application that integrated with company API and Android Debug Bridge (ADB) to automate push notification latency testing for all current and future video doorbell systems.
- Led cross-functional software and hardware testing for 1M+ Skybell and VDB770 video doorbell devices, improving performance through rigorous thermal battery, device integrity testing, and issue resolution for dealer concerns.
- Optimized package alerts and perimeter guard functionalities on VDB770, ensuring enhanced user experience through detailed system integration and automated testing.
- Spearheaded testing for the new Relay Panel Notifications feature, collaborating with software developers and hardware teams to ensure complete test coverage, including both backend and frontend evaluations.
- Directed Sunflower Labs security drone integration, facilitating real-time and simulated environment assessments, coordinating results with stakeholders, and ensuring agile issue resolution.

### Software Engineer Intern

*MicroStrategy* | Tysons, VA | *May 2021 - August 2021*

- Developed a robust developer portal using HTML, CSS, JavaScript, and static site generators such as Eleventy, Jekyll, and DocFX, improving code documentation and user engagement.
- Actively participated in Agile team development, delivering features and improvements within Scrum-based sprints.
- Collaborated in bi-weekly hackathons focused on data analysis and utilizing internal tools.

## PROJECTS

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### RobotX Maritime Challenge

- Collaborated with a multidisciplinary team to design and build a UAV platform for autonomous navigation and object retrieval.
- Developed a self-leveling platform using Arduino and C++, enhancing stability and precision for UAV landing.
- Integrated hardware and software components to achieve reliable performance in dynamic maritime environments.

### ML-Driven High-Frequency Trading Model

- Developed an LSTM-based model using TensorFlow to predict short-term price movements, focusing on high-frequency trading data and time-series features.
- Designed a data pipeline to process trading data, integrating technical indicators and implementing a Bayesian optimization framework to refine model performance.
- Utilized backtesting strategies to assess model accuracy, ensuring scalability and data integrity across large datasets.

### Fall Detection and Home Monitoring System

- Developed a real-time fall detection system using Python, OpenCV, and YOLOv3-tiny, integrating PIR sensors to track motion, enhance accuracy, and control lighting in smart home setups.
- Implemented a custom algorithm to detect falls and generate alerts, supporting RTSP streams or webcams, offering scalability and flexibility for various safety monitoring environments.

## EDUCATION

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### Bachelor of Science in Computer Engineering

*George Mason University* | Fairfax, VA | *August 2018 - May 2022*

## TECHNICAL SKILLS

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**Languages:** Python, C/C++, Java, SQL, VHDL, Verilog, JavaScript, HTML, CSS, Markdown, MATLAB

**Software:** Git, Visual Studio, Postman, JMeter, Jira, Confluence, Wavefront, Wireshark, Bitbucket

**Operating Systems:** Windows, UNIX, LINUX, macOS