Zachary Diaks

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Education

NORTHEASTERN UNIVERSITY — **BOSTON, MA**
B.S. Physics, Mathematics and Computer Science Minor — May 2020

Work Experience

MATHWORKS — **NATICK, MA**
Quality Engineer III — May 2023 - Present

- Head of quality for Sensor Fusion and Tracking Toolbox (SFTT), collaborating with developers to implement test plans, while monitoring key quality metrics including code complexity, performance, test coverage, and user experience data.
- Developed an internal Generative AI tool in MATLAB to automatically generate test artifacts from software specification documents, reducing manual test planning and implementation effort saving an average of one hour per test plan.
- Optimized default test selection strategy for our build and test system by leveraging source to test mapping, saving as much as 100 hours of linear test time per job.

Quality Engineer I — October 2021 – May 2023

- Worked with developers of SFTT to design and implement test plans to qualify new features, and lead retrospectives on the quality of the product after each release.
- Contributed to an internal tool used to build test bed reports from markup in test files (MATLAB backend, React frontend, MySQL database). Reports show metadata including requirements to test mapping, Test Pyramid level, test intent, and ownership.
- Maintained and added CI/CD pipeline for internal ticket automation tool using MATLAB, GitLab, and TeamCity.

Application Support Engineer — June 2020 – October 2021

- Provided technical support to customers for MathWorks products in the Deployment and Test and Measurement areas including MATLAB Compiler, Database Toolbox, and Data Acquisition Toolbox.
- Created and maintained technical training courses including a module outlining how to call Python code from MATLAB.
- Contributed to a random MATLAB code generator to test MATLAB to C code generation for MATLAB Coder.

ROGERS SCIENCES — **BOSTON, MA**
Research and Development Engineering Co-op — July 2019 – December 2019

- Integrated IMU into wearable phototherapy device to track patient activity during recovery. Prototyped data streaming and visualization to a mock website using Python.
- Designed test fixtures to validate device specifications against average patient data in FDA databases to prepare for FDA approval.
- Automated device calibration tasks for manufacturing technicians by processing raw data from a spectrometer using C++. Decreased workflow from several minutes to less than a minute.

HARVARD MEDICAL SCHOOL — **BOSTON, MA**
Neuroimaging Co-op, Lee Lab — July 2018 – May 2019

- Operated Transmission Electron Microscope to image mouse cerebellum for 3D reconstruction; developed MATLAB tool for ROI labeling and prepared images for reconstruction using Bash/Python.
- Integrated Google and Slack APIs using Python to automate and reduce the runtime of image processing tasks from several hours to less than a minute.

DRAPER LABORATORY — **CAMBRIDGE, MA**
Advanced Sensors and Imaging Systems Co-op — July 2017 – May 2018

- Programmed and incorporated electronics (IMUs, precision rotary stages, and Hall effect sensors) into experimental imaging and navigation systems using MATLAB and LabView.
- Integrated IMU, and wrote algorithm to track the trajectory of a basketball shot using MATLAB for a public technology showcase (EP17, **https://vimeo.com/236770769**).