Ravindu Karunathilake

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KEY QUALIFICATIONS/COMPETENCIES

- OOP experience with skills in embedded software development (C++), test automation, data visualization (Python/MATLAB), and desktop application development (Java).
- 2+ years of system integration experience working within a cross-functional SAFe agile business environment.
- Experienced in managing test data, developing comprehensive test models, and creating/maintaining CI pipelines with Docker containers to facilitate accurate and reliable testing.

WORK EXPERIENCE

SEP 2021 - APR 2023 (FT)
University of Alberta - Electrical Engineering
Graduate Researcher

- Conducted an extensive literature review of 300+ academic papers to support project planning, and technical troubleshooting.
- Engaged in bi-weekly synthesis and presentation of research findings tailored for diverse technical and non-technical audiences.
- Engineered robust scripting tools with Python, and MATLAB, to extract, analyze, and visualize simulation results: streamlining data-driven decision-making processes.
- Assisted in teaching a digital image processing course of 45 senior undergraduate engineering students.
- Completed 15 credits of graduate level course work (GPA: 3.9/4.0).

MAY 2019 - AUG 2021 (FT)
General Dynamics Mission Systems - Canada
Systems Integration Engineer (EIT)

- Efficiently managed complex requirement dependencies throughout product test design and execution using IBM Rational Quality Manager software.
- Engineered solutions to high-priority firmware defects (C++) by conducting in-depth code and device log investigations for mission critical devices.
- Enhanced team productivity by implementing automation testing (Python), covering 80% of product functionality by writing scalable and unit-testable code.
- Mentored a team of junior members (5+), offering guidance on test design, and acceptance testing through code reviews, one-on-one meetings and pair-programming sessions.
- Collaborated on product change request reviews with systems engineers, developers, and testers to formulate test plans and address deficiencies in product designs.

EDUCATION

SEP 2014 - JUN 2019 **BSc in Electrical Engineering**
Electrical and Computer Engineering
University of Alberta

TECHNICAL SKILLS

PROGRAMMING LANGUAGES	Python, MATLAB, Java Bash, JavaScript, C/C++ HTML, CSS
TOOLS AND TECHNOLOGIES	LaTeX, GIT, Linux, TCP/IP TailwindCSS, Angular, Qt

CERTIFICATIONS

JUN 2019 **Certified SAFe® 4 Agilist**
SCALED AGILE, INC.
Credential ID 70451492-4752

PROJECTS

Chess Engine

Java based chess game with a full GUI programmed using Java **Swing** toolkit. Main goal of this project was to practice Java based object-oriented programming (**OOP**) and test-driven development (**JUnit4**) skills. The chess game provides functionality of a traditional chess game between two local players or a minimax based AI.

Invoice Generator

This project involved the creation of a **Python** based desktop application for the creation of professionally formatted PDF invoice documents. The GUI was implemented with **PyQt6** and the PDF was formatted with **fpdf2** Python library.

Speech Audio Integrity Analyzer

Python based audio processing software for evaluating audio quality (speech transmission index) degradation through military communication radio relays. This project required the remote interaction with testing equipment and code implementation of fundamental **signal processing** principles (e.g. **DFT, band filters, MTF, SNR**).

Automated Optical Component Designer

Engineered a **Python** design pipeline for novel free-form optical devices (metasurfaces) by interfacing with electromagnetic solver **API** (ANSYS Lumerical), data analysis and visualization libraries (e.g. **matplotlib, pandas, numpy, scipy**).