KEVIN SCOTT

Software Engineer

Contact

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Languages

C++ (Proficient)
C
Python
JavaScript
HTML
React Native

Technologies

Robotics
Linux
VxWorks
Firmware
RTOS
Docker
ARM
PPC

Interests

Running (2 Marathons)
Weightlifting
CrossFit
Basketball
EDM
Skiing
Baseball
Football
Cars
Hiking
Camping
Golfing

Experience

Embedded Software Engineer
Yaskawa America, Inc
2018 – Present

C++ | C | Linux | VxWorks | RTOS | ARM | PPC | Docker | Robotics | Firmware | googletest | Azure Pipelines

- Implemented motion control and I/O support for A1000 inverter drive on MP3300iec series controller (feature support released in May, 2019).
- Interact with full production firmware stack to achieve feature development and bug-fixes on daily basis.
- Utilize a strong knowledge of polymorphism and object-oriented programming to drive efficient and sustainable C++ software design.
- Implement unit test and integration test coverage for all production code changesets.
- Utilize a working knowledge of transformation matrices and kinematics to interact with motion-control firmware.
- Thoroughly document design decisions regarding code additions and refactors.

Projects

Full-Stack Mobile Chess App
github.com/ChessApp

C++ | JavaScript | React Native | Docker | Linux | Python | googletest | Expo Client | AWS EC2

- Game engine leverages personally designed C++ algorithms to enforce all rules.
- Compiled executable runs on a server, receiving input from connected mobile clients via HTTP requests and returning the new game state in XML format.
- Mobile-friendly GUI client is written in JavaScript using React-Native, and is deployed using Expo Client.
- AWS EC2 is used as the server for deploying the back-end C++ executable and connecting to users via the mobile client.
- Users can play against each other remotely through their respective mobile devices.
- Docker is used for capturing C++ build environment and JavaScript run-time environment.
- Googletest is used for unit test infrastructure and Python is used for integration test and automated debug infrastructure.

Personal Finance Transaction Sorter
github.com/kscott27/TransactionSorter

Python | PyQt5

- Parses bank statement csv files and groups transactions into custom, user-defined categories for further analysis and monitoring.
- Stores keywords from transaction names that were categorized by user-defined criteria so the user never needs to manually classify a transaction with that keyword again.

Extended Kalman Filter
github.com/kscott27/Udacity-ExtendedKF

C++ | Linux | Robotics

- Implemented algorithms for Kalman filtering data sets of noisy lidar and radar measurements.
- Utilized object-oriented principles to increase code-reuse and create a scalable framework for filtering other types of sensor data.

3-Axis Heat Flux Calibration Robot
kmscott27.wixsite.com/kevinscott

C++ | RTOS | Robotics | Python | PyQt5

- Integrated C++ software into AVR FreeRTOS to achieve autonomous 3-dimensional motion, read digital thermocouples, and convert analog gauge output voltages into digital signals.
- Designed, ordered and manually soldered custom PCB in order to condense necessary peripheral electronics.
- Designed GUI using Python to interface with device over serial via a remote computer.

Dual-Axis Automated Nerf Gun
kmscott27.wixsite.com/kevinscott

Python | RTOS | Robotics

- Utilized proportional closed-loop feedback from encoders and accelerometer for position control.
- Utilized transformation matrices and vector spaces to calibrate device based on error measurements.

Education

B.S., Mechanical Engineering, Concentration in Mechatronics
California Polytechnic State University, San Luis Obispo
Cum Laude
Sept 2013 – June 2018

Online Nanodegree: Self-Driving Cars, Part 1
Udacity
2018