Timothy Rupprecht

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EDUCATION

NORTHEASTERN UNIVERSITY

BS in Computer Engineering
May 2016 | Boston, Ma
College of Engineering
Dean's Scholarship (All Semesters)
GPA: 3.56 / 4.0

PROJECT KARMAN

Lead Firmware Engineer
Taught and led peers in the development of the NEU attempt to be the first academic institution to breach the Karman line using rocket propulsion. The final project included a fully functional avionics system operating on an XMEGA128-A1U. This required the designing of device drivers, operating system tasks, and a mission plan.

COURSEWORK

Machine Learning + Data Science
Firmware + Embedded Design
Local Searches + Algorithms
Optimization Methods
Unix Tools + Scripting
Robotics

LINKS

Github:// **tym0027**
LinkedIn://
timothy-rupprecht-59665997

SKILLS

PROGRAMMING

Over 75,000 lines:
C/C++ • Python • Bash
Over 10,000 lines:
Matlab • C# • JavaScript • Assembly
Familiar:
HTML/CSS • Android • SQL • Ampl/Cplex

GENERAL

Operating Systems:
freeRTOS • safeRTOS • Ubuntu/Debian Redhat • ROS
Other:
Markup languages • Object Oriented Design • Scripting

EXPERIENCE

ALERT - A DHS CENTER OF EXCELLENCE | Software Engineer

Jan 2018 – Present | Boston, Ma

- Designed and implemented a system that allows the logging of bounding boxes drawn over objects of importance in a set of video frames.
- Managed a team of students using the aforementioned tool to develop ground truth for machine learning projects.
- Created a script to score the performance of an algorithm by comparing algorithm data to the prepared ground truth data.
- Directed, and planned data gathering events for use by the ground truth system and algorithm research teams.

L3 SECURITY DETECTION SYSTEMS | Software Engineer

Jan 2015 – Jul 2017 | Woburn, Ma

- Added utilities to expand the scope of log files to include data on various system components and their device states. Created a daemon to track system metrics by parsing the logs for these device states.
- Formulated python and bash scripts that used the increased detail of the system logs to prove connections between events and bugs, laying the foundation for the future use of data science principle in system diagnoses.
- Implemented a system to PXE Boot software onto machines as part of a team. The system used a Raspbery Pi that acted as a version controlled software repository for production software being distributed to the field.

HARVARD BIOSCIENCE | Embedded Software Coop

Jan 2014 – Jul 2014 | Framingham, Ma

- Implemented design features for medical syringe pumps and similar devices ranging from adding to motor drivers to updating existing code for customer performance and operational requests.
- Applied bug fixes, and developed software tools for communicating with the company's medical devices using USB and hex commands.
- Automated a series of motor tests that are done for quality assurance and led others in QA testing.

BOSE CORPORATION | Systems Engineer Coop

Jan 2013 – Jul 2013 | Framingham, Ma

- Designed a device that sends DSP commands to a Car Amplifier using an arduino and PCB board.
- Composed MATLAB scripts for transfer function analysis of microphone and speaker combinations inside car cabins for different scenarios.
- Verified simulated test outcomes for noise cancellation performance on actual cars using software that would simulate driving conditions for the car.

RESEARCH

NEU NETWORK LABS | Research Assistant

Sep 2015 – May 2016 | Boston, Ma

- Worked with a team utilizing a google maps api in order to calculate a best route to a destination that would keep one within range of a wifi source.
- Gathered raw data to act as values at nodes within a graph that could be used for decision making in a BFS algorithm that would traverse through the graph.
- Utilized report generating software (R Markdown & Latex) to conveniently incorporate the outputs of the algorithm into progress reports.