Sargis Yonan
Robotics & Computer Engineer

CONTACT

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EDUCATION

M.Sc. in Computer Engineering   September 2017 - December 2018
Emphasis in Robotics Engineering & Control Theory
University of California, Santa Cruz

- Courses in Robotics, Optimal Estimation, Stochastic Filtering, Control Theory
- Thesis: Improved Field Exploration with Variance Suppressing Path Planning
- Introduced a set of path planning techniques for the optimal exploration of unknown fields using an autonomous vehicle

B.S. in Computer Engineering   September 2013 - June 2017
Concentration in Robotics & Control
University of California, Santa Cruz

- Project/Research Topics: UAVs, Sensor Node Networking, Power Systems
- Graduated with Honors in Major

Minor in Computer Science   September 2013 - June 2017
University of California, Santa Cruz

WORK EXPERIENCE

Apple   March 2019 - Present
Embedded Camera Software Engineer

Image Signal Processor Hardware Interfacing software engineer.

SpaceX   June 2018 - September 2018
Associate Flight Software Engineer

Firmware engineer for large-scale satellite constellation and vehicles. Designed and wrote fault tolerant system critical code and peripheral drivers for flying hardware.

University of California, Santa Cruz   January 2018 - December 2018
Teaching Assistant

Microprocessor Systems Design (Fall 2018): Led instructional labs teaching embedded systems design, hardware design, hardware debugging, embedded software design in C, embedded software debugging, and Linux (libusb, systems C on Linux).
Engineering Capstone Design (Winter 2018 - Spring 2018): Advised twenty teams of senior-level engineering students taking their capstone sequence. Met with each team for one hour per week where project details are discussed. Additionally assisted teams in their system design, architecture, low-level implementations, and engineering approaches, as well as low-level hardware and software debugging. The projects ranged from autonomous robots to large-scale mesh networking systems.

CityBlooms Urban Micro Farms **June 2017 - October 2017**
January 2019 - March 2019

Embedded Software and Hardware Engineering Intern

Designed and implemented various sensor and peripheral drivers for shipping systems that acquired data from live farming and micro-agricultural environments. This involved writing various system level modules in bare-metal C/C++ on a microcontroller as well as C and Python on a Linux IoT system. Created a deployment automation system for shipping hardware.

Pearl Automation **January 2016 - December 2016**
Firmware Engineering Intern

Wrote software components and features on both an ARM based controller with a Real-Time Operating System, and a system with an Embedded Linux Operating System. Developed a dynamic frequency scaling algorithm for a processor that drastically improved the battery life of a device as well as other physically apparent aspects in a shipping product.

PROJECTS

Micro Linear Algebra Package - A matrix math library optimized for embedded systems. The library contains functionality for learning, data fitting, filtering, and controls.
github.com/SargisYonan/uLAPack
Embedded Kalman Filter - A Kalman filtering library for linear and nonlinear systems. The library is ideal for embedded systems where dynamic memory allocation is a concern.
github.com/SargisYonan/ukal
Jay Flight Controller - Sensor drivers, feedback controller, and networking code for a pod of quad-copters.
github.com/PAVx/jay
Sensor Node Operating System (snOS) - Dispatch queue and task manager for microcontrollers in an IoT network.
github.com/SargisYonan/snOS
LANcala - A networked multi-player implementation of the board game Mancala in C++.
github.com/SargisYonan/lancala
Field Exploration Simulation Framework - A MATLAB framework and simulation environment for autonomous field exploration using prediction variance suppression techniques introduced in my Masters thesis.
github.com/SargisYonan/field_exploration

SKILLS

Software Engineering: C, C++, Python, Java, Real-Time Operating Systems, Embedded Software Design, x86/MIPS/ARM Assembly
Computer Engineering: Computer Architecture, Digital Logic Design
Embedded Systems: ARM, AVR, PIC, CAN, I2C, UART, SPI, sensor integration, protocol debugging hardware
Robotics Engineering: Sensor Fusion, Feedback Control, Computer Vision, UAVs
Mechanical/Electrical Engineering: Sensor Design, Analog Filter Design, Electro- Mechanical System Design
Software/Libraries: Linux/UNIX, MATLAB, OpenCV, TensorFlow, Eagle CAD
Computational & Applied Mathematics: Kalman Filters, Control Theory, Linear Dynamical Systems, Machine Learning, Geostatistics, Frequency Domain & State Space Analysis