Alex Mikhalev

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Education

University of California (UCLA)
Samueli School of Engineering
September 2018 — Present

- B.AS., Computer Science & Engineering
- GPA: 4.00, Engineering Dean's Honors Fall 2019 — Spring 2020
- Expected Graduation: June 2022

Work Experience

Green Hills Software
Software Engineering Intern
June 2020 — August 2020

- Learned to use hardware probes and trace replay to solve complex, non-deterministic bugs in embedded systems (ARM and PowerPC)
- Improved performance of ARM CoreSight ETMv4 CPU trace analysis system by 30% in certain configurations

Micron Technology
Software Engineering Intern
June 2019 — September 2019

- Developed new features and triaged bugs in C++ interface, Python bindings, and Linux kernel driver for UFS flash testers
- Migrated from legacy build to CMake, adding Python 3 support
- Interacted with internal users to answer questions and fix issues

Hewlett-Packard Inc.
Software Engineering Intern
June 2016 — February 2018

- Developed software in C# for interfacing legacy printers with modern cloud-management solutions
- Created tools using Node.JS and PowerShell for version control, testing, and CI of cloud service configurations

Extracurricular Activities

Unmanned Aerial Systems at UCLA
Controls Director
September 2018 — Present

- Developing UAV systems using cutting-edge technology, including PX4 autopilot firmware, real-time kinematic GPS and ROS 2, completing objectives such as fully autonomous missions, payload delivery, and vision target localization
- Reached stage 2 of the ongoing *First Responder UAS Endurance Challenge* with a gas-electric hybrid autonomous octocopter design

RoMeLa Research Assistant
August 2020 — Present

- Contributed to controls code of PEBL research bipedal walking robot including developing controllers and infrastructure improvements

Open Source Contribution
Ongoing

- Contributed features and bug fixes to projects including LLVM, Reactstrap, MAVROS, PX4, and Rust AVR hardware abstraction library

***FIRST* Robotics Competition**
Lead Programmer on Team 2122
January 2015 — April 2018

- Developed navigation, encoder-driven motion-profiled controls, and computer vision algorithms for robots in Java and C++
- Created networked systems including Java and C++/Qt endpoints
- Taught and led students in software engineering and robotics

Personal Projects

Smart Sprinklers System
amikhalev.com/sprinklers
April 2017 — Present

- Developed firmware in Go for running an internet-connected home irrigation system, using MQTT for scalable communication
- Created and hosted a single-page cloud application using React, TypeScript, WebSockets and MySQL for controlling sprinklers systems remotely.

Skills and Interests

Courses Machine Learning *(In Progress)*, Data Mining *(IP)*, Computer Organization, Data Structures, Operating Systems, Linear Algebra (proof based), Differential Equations, Calculus

Programming Languages C/C++, Python, Mathematica, Rust, Go, JavaScript/TypeScript, Java, SQL, Kotlin, C# .NET, Shell Scripting, x86 and ARM assembly

Environments Linux servers, Linux/macOS/Windows desktops, Git/SVN Source Control, Android/iOS devices, embedded ARM devices, AVR microcontrollers

Activities Skiing, mountain biking, hiking, travelling to other countries