

Jack Kolb

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B.S. Honors Mechanical Engineering, UC Riverside

2016 – 2020 (expected)

Work and Large-Scale Project Experience

UCR Autonomous Underwater Vehicle (UCR RoboSub)

Large autonomous submarine project competing annually in the international RoboSub competition

Project Lead

2018 – present

- Established standardized administration, documentation, and systems engineering practices
- Oversaw 25+ members in the development of a new submarine, from ideation to completion
- Worked with university departments, corporate sponsors, and student organizations
- Led STEM outreach to local high school and middle school students
- Expanded the project into the premier student project at UCR, winning “Best Project” in 2019

Mechanical Lead

2017 – 2019

- Led a team of 10+ engineers in developing torpedo systems, external battery pods, a WiFi-transmitting buoy, electrical housings, and mechanical components
- Presented at outreach events, managed the project website and social media profiles
- Created a “checklist” test procedure system, no leaks for 50+ water tests

Mechanical Team

2016 – 2017

- Designed submarine endcaps to meet structural/fatigue and watersealing requirements
- Designed modular electronics shelf, enabled passive cooling of electrical components

UCR Residential Life

Resident Advisor

2018 – present

- Managed a building of 70+ first-years in UCR’s largest resident community
- Engaged in emergency and crisis response, intentioned community development, first contact for personal and community conflicts, and supporting social and academic success
- Awarded MVP in 2019

Undergraduate Research

2018 – present

- Developed a system to analyze vibrations from electric motors to predict mechanical failure
- Worked with UCR’s research board to apply the system on fume hoods across UCR

Side-Project Experience

I love hacking, both in hackathons and on my own time! Here are several projects:

Syncopate

Python, WSGI

🐙 /syncopate

Distributed project load balancer, allows numerous computers to become nodes and connect with a central server to receive projects to run; Projects are run continuously, with mechanisms to immediately redistribute projects from broken nodes using saved state variables

Firewatch

Python, Raspberry Pi, Flask, HTML/CSS

🐙 /firewatch

Uses 400,000 data points on California’s wildfire history, vegetation, and precipitation to predict the likelihood of wildfires across California using basic machine learning

ThreeCups

Python, Raspberry Pi, OpenCV

🐙 /threecups

Tracks the motions of three identical cups to solve the classic “Three Cup Shuffle” game

Student Organization Affiliations

Institute of Electrical and Electronics Engineers

Member, Officer

2016 – 2020

- Officer of UCR’s IEEE chapter, showcased IEEE at outreach events, aided the chapter’s various activities
- Led technical workshops: Soldering; Arduino; Raspberry Pi, ROS, Internet of Things; 3D Printing
- Worked with large competition projects to establish sustainable project management practices

American Society of Mechanical Engineers

Member

2016 – 2020

- Hosted quarter-long weekly workshops preparing first-year mechanical engineers for success in their “weed-out” course