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# MacCallister Higgins

MacCallister Higgins is an engineer and entrepreneur with a strong track record of spinning up and delivering new projects with a variety of team sizes. He's created a company that has deployed self-driving cars across the country, developed next-generation physical awareness technologies for military aircraft, built open source self-driving cars, and lead a startup company that enabled the widespread, commercial use of drones in urban environments. In academia he performed research in the field of Human-Robot Interaction, Unmanned Autonomous Systems, and built mesh networks for NASA.

## SKILLS

C++, C, Linux, Robot Operating System (ROS), PCL, LAS/LAZ/PCD toolchains, Docker, Kubernetes, Private LTE, LIDAR, RADAR, Localization, Perception, UAVs, Self-Driving Cars, Git, Gitlab, Ansible, Python (for scripting and ROS), Android apps, PX4 / SITL / HITL

## EXPERIENCE

### **Voyage** — *Senior Robotics Engineer and Co-Founder*

FEBRUARY 2017 - PRESENT

- Responsible for developing both the architecture and direct implementation of **localization, perception, mapping, low-level controls, hardware buildouts, private wireless networks, distributed infrastructure sensors, and navigation code on the autonomy team**.
- Helped shape the earliest days of the Voyage spin-out, contributing to fundraising, recruiting, team organization, and other high-level company efforts.
- First person on the ground in new deployments, evaluating the technical feasibility of the Voyage service, coordinated with mapping partners and community stakeholders, handled the logistics behind building remote operations centers and new teams, and handled directed engineering projects specific to the Voyage growth story.
- Lead the team to **over 50 employees and $60 Mil raised** to deliver on our vision of self-driving cars moving real people, today.

### **Udacity** — *Senior Software Engineer*

AUGUST 2016 - FEBRUARY 2017

- One of three engineers on the small core engineering team on the world's first Open Source Self-Driving Car, which **drove from Mountain View to San Francisco (handled surface streets, traffic lights, rain, pedestrians, and other vehicles) 100% autonomously after just over four months of development**.

- Wrote code that touched every aspect of the system (perception, controls, localization, mapping, and path planning).
- Guided the team with insight into the best practices of robotics architecture and design.
- Designed distributed competitions and acted as the point of contact for open-source development.
- Contributed to or consulted on Udacity curriculum development for the Self-Driving Car, Robotics, and Flying Car Nanodegree programs.

### **Sierra Nevada Corporation** — *Military Aircraft Software Engineer, Science and Technology Research Team*

JULY 2015 - AUGUST 2016

- Wrote code and designed systems that allowed aircraft to be flown in Degraded Visual Environments (DVE) such as dust, rain, snow, and fog.
- **Responsible for the design and development of real-time radar/LIDAR control, sensor processing, spatial and temporal algorithm development, and image generation software** for military and commercial aviation.

### **NVD** — *Drone Software Engineer and Co-Founder*

SEPTEMBER 2014 - OCTOBER 2016

- **Developed a real-time air traffic control and path planning system that utilized cellular and satellite communications technology, and was capable of controlling any number of autonomous aircraft without human intervention; creating optimal paths around obstacles, elevation changes, weather concerns, no-fly zones, and even other moving aircraft.**
- Lead operations, fundraising, and business development efforts to grow to 11 employees and individual contributors.
- Wrote code for embedded linux systems and Android phones, designed custom hardware, and built our drone communications pipeline.

## EDUCATION

### **University of Nevada, Reno** — *Computer Science and Engineering*

GRADUATED MAY 2015

Focused on intelligent systems, robotics, and unmanned aerial vehicles. Interned for Flirtey as their first technical employee, the first company to make drone deliveries in the United States.

#### AWARDS

- Awarded Full-Ride Scholarship to Attend the University of Nevada, Reno
- Recruited as Presidential Scholar, the highest award given to entering freshmen
- College of Engineering Dean’s List, Selected for an Undergraduate Research Position
- Overall winner of $50,000 Sontag Entrepreneurship Award at the University of Nevada, Reno for drone/UAV startup company Nevada Dynamics