# Sidharth Lakshmanan

## Computer Engineering Student at the University of Washington

My goal is to secure an internship for Summer 2021 that will allow me to apply and improve upon my embedded systems and lower level programming knowledge. As an engineering-minded, highly motivated student, I bring fresh new perspectives and clever new ideas wherever I go.

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## EDUCATION

### Computer Engineering

University of Washington, GPA: 3.92

*09/2019 – Present (Expected: 06/2023)* *Seattle, WA*

*Relevant Courses*

- CSE 333, Systems Programming (C/C++)
- CSE 474, Embedded Systems
- CSE 163, Data Science and ML in Python
- Math 308, Linear Algebra
- Stat 390, Statistics in R
- CSE 311, Discrete Mathematics

## EXPERIENCE

### EcoCar UW

University of Washington

*09/2019 – Present* *Seattle, WA*

*US Department of Energy and General Motors competition to covert a gasoline vehicle to a hybrid electric vehicle with Level 2 autonomy.*

*Achievements/Tasks*

- Implemented controls algorithms to maximize the efficiency of the car using MATLAB, Python, and C
- Programmed the interface to allow external sensors to convey information to the propulsion controls of the car
- Built a sensor fusion algorithm to implement adaptive cruise control with lane following capabilities
- Applied Bayesian and Kalman Filter techniques to account for sensor error when using sensor data for implementing autonomy

### Software Development Intern

ECSite App

*06/2020 – 09/2020* *(Worked Remotely) Seattle, WA*

*A tech-startup aiming to install 5G in various public places like stadiums and hospitals.*

*Achievements/Tasks*

- Designed and built a React form that would be able to handle customer orders
- Implemented a webserver using Express to communicate large (10 GB) files to AWS S3 and verify ReCAPTCHA
- Created a generic tailored React form template for use in future forms

### Autonomous Flight Systems Laboratory

University of Washington

*08/2018 – 09/2019* *Seattle, WA*

*Research laboratory (Dr. Lum) that is focused on performing research on drones that are able to fly autonomously*

*Achievements/Tasks*

- Built out management solution to keep track of large amounts of flight data
- Created a new type of drone that can switch from vertical to horizontal flight mid-air
- Programmed a Raspberry Pi to control the hardware dynamically based on sensor inputs

## SKILLS

Java | C/C++ | Google Cloud Platform | React.js | Python | R | MATLAB

## PROJECTS

### Search Engine (C/C++)

*10/2019 – Present*

- Created a multi-threaded search engine to search for a given word in thousands of files quickly and efficiently
- Sorts the files in terms of frequency of the target word(s)
- Implements a linked list and hash table in C
- Uses TCP to communicate HTML data to render the UI of the search engine.
- (Has not been deployed)

### Climate Change Project

*08/2016 – 05/2018*

- Founder and lead designer of this project to create a wind-powered phone charger.
- Presented a prototype of this creation to 50 middle-schoolers to inspire them to help against climate

## OTHER ACTIVITIES

### University Chorale *09/2019 – Present*

*Highest-level non-major choir at the University of Washington. We sing a diverse range of music around the Greater Seattle Area.*

### Woof3D *09/2019 – Present*

*3D printing club at the University of Washington. Here, I build and program 3D printers from scratch.*

### IBM Qiskit *10/2019 – Present*

*IBM's quantum computing solution that allows participants to code algorithms in the Qiskit language*

## CERTIFICATES

Google Cloud Architect *04/2020*

IB Diploma *05/2018*

AP Scholar *05/2019*