

# Andrew Kim



## Personal Info

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### GitHub

<https://github.com/AndanteKim>

### LinkedIn

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### Website

<https://andantekim.com/>



## Skills

Programming Language: Python, C++, C, JavaScript, JAVA, Assembly, VBA

Libraries & Frameworks: Matplotlib, Pandas, Numpy, OpenCV, Scikit-Learn, HTML, CSS

Operating Systems: Linux - CentOS 8, Windows Server 2012

Tools and Platforms: VMware Workstation Pro 15, Github, Gitlab



## Education

2019-01 - 2021-05

**The University of Texas at Austin, Austin, TX**

*Bachelor of Science, Mathematics*

2017-08 - 2018-12

**The University at Albany - State University of New York, Albany, NY**

*Bachelor of Science, Computer Science*



## Work History

2019-06

- 2019-12

### Undergraduate Research Assistant

*The Accelerated Research Initiative at the University of Texas at Austin, Austin, TX*

- Conducted Machine Learning(ML) individual project about how a ML calculator could effectively compute potential energy surfaces for an atom compared to other atom calculators with different optimized algorithms.
- Trained and tested data in the ML calculator using libraries : Scikit-Learn, Matplotlib and Neural Network of Python in the research server of Linux Cluster.
- Analyzed test results in histogram plots and made a presentation to our research group to explain individual research progress.

2018-05

- 2018-08

### Programmer Intern

*The Case Group LLC., Green Island, NY*

- Developed a software tool to check hardware stock in alphabetic order by Excel and Visual Basic Application (VBA).
- Designed a macro program to convert file extensions and transmit a blueprint to cutting machines and Computer-Aided Design(CAD) software for automation by VBA concisely and efficiently.



## Projects

2021-01

- 2021-02

### Autonomous Vehicle Sensor

- Created Kalman filter which is essential for tracking a car to predict accurate location of the car by Python and C++.
- Generated simulation data of the car and tracked its distance and speed(velocity) by means of Matplotlib for data visualization.
- Analyzed the simulation data measured by LiDAR(Light Detection and Ranging) sensor and Kalman filter plots and found Kalman filter is more accurate to predict the car's exact location and speed rather than LiDAR.

2021-02

- 2021-05

### A Route Planner

- Implemented a "Google-maps" style route planning algorithm to navigate to a destination using Python.
- Designed a map having 40 different intersections(0~39) and visualized the output of pathfinder by A\* algorithm.
- Accomplished that A\* algorithm is the best option to reach the destination considering the shortest path and minimum cost.

2021-05

- 2021-07

### Traffic Light Detection

- Built a classifier to perceive an image from traffic light dataset and predict a color of traffic light among red, yellow, or green by Computer Vision library: OpenCV in Python.
- Created a detection algorithm utilizing RGB and HSV color model to train the dataset, and then test any random images.
- Accomplished 96.7% of 100% correctly to predict the color in random images on the premise that the classifier should not recognize green if the real traffic light in the images is red.