Andrew Kim

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Software Engineer for Autonomous Vehicle
Embedded System | Robotics | Machine Learning

AT A GLANCE

- Rich experience with C++ / Python and Linux development
- Strong package development / optimization / implementation / Git version control skills
- Great team player, dedicated to the company, willing to take on challenging tasks with passion in autonomous technology

TECHNICAL SKILLS

- **Programming language**: Python, C++, C, Java, JavaScript, Assembly, VBA, Bash, JSON, ROS
- **Libraries and Frameworks**: Jupyter Notebook, OpenCV, Tensorflow, Keras, Matplotlib, Numpy, Pandas, Scikit-Learn, CUDA
- **Operating Systems**: Linux – CentOS 8, Ubuntu, Windows Servers 2012
- **DevOps Tools and Platforms**: VMware Workstation Pro 15, Github, Gitlab, Git, Docker, AWS Software Development Tools

CERTIFICATIONS

- Linux Professional Institute Certification – 1(LPIC - 1)
- Cisco Certified Network Professional(CCNP) – Route

EDUCATION

- **Bachelor of Science in Mathematics, the University of Texas at Austin, GPA 3.65/4.0 (May 2021)**
  - Fulfilled various courses, incl. Advanced Calculus for its Applications 2, Applied Statistics, Probability, Stochastic Process, Software Engineering, Neural Network, Algorithm and Complexity
- **Bachelor of Science in Computer Science, the University at Albany(SUNY), GPA 3.91/4.0**
  - Fulfilled various courses, incl. Introduction to Programming for Java, Data Structures, Computer Architecture

WORK EXPERIENCE

Amazon Robotics LLC.

A manufacture corporation specialized in automated storage and retrieval systems with mobile robotic vehicle

Support Engineer 1 **10/2021 – Present**

- Tested new automation of industrial robots called Sparrow Project for Quality Assurance with Docker and debugged software-hardware interface issues with ROS controller
- Collected dataset as JSON format from the implementation of robotic workcells identifying and categorizing Amazon products
- Developed a search engine from the dataset with AWS development tools (Python, Bash) on Ubuntu environment for the purpose of research analysis

  Key Achievements
  - Improved 25% productivity for distribution management and produced 30% more qualified dataset by means of the automation of robotic workcells in a wholesale warehouse named Amazon SAT (San Antonio Airport)2

The Accelerated Research Initiative @ the UT Austin

The initiative in which undergraduate students work alongside scientists to make discoveries

Software Development Research Assistant **06/2019 – 12/2019**

- Conducted Machine Learning (ML) project to define how an ML calculator effectively compute potential energy surfaces (PES) 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 presented to the research group to explain individual research progress

  Key Achievements
  - Independently conducted an analysis of ML algorithms and neural network, and applied methods to the atom calculators to predict PES efficiently

The Case Group LLC.

A manufacture corporation specialized in a large contract for customizing windows and doors to a corporation

Software Development Programmer **05/2018 – 08/2018**

- 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

  Key Achievements
  - Automated the processes of work between computer and cutting machine through the macro program

SELECTED PROJECT EXPERIENCE

Project: Autonomous Vehicle Sensor **01/2021 – 03/2021**

- Created Kalman filter, 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 velocity with Matplotlib for data visualization

  Key Achievements
  - 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