Everett Key

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TECHNICAL SKILLS

Technical Skills: Python [Pytorch, Numpy, Matplotlib, Pandas] | SQL | Java | C++ | JavaScript | HTML | Matlab | R | AOSP

WORK EXPERIENCE

Meta Reality Labs, Wearable Camera (C++, AOSP) **January 2022 – November 2022**
Software Engineer Burlingame, California

- Developed a unified API for 6+ fusion algorithms, providing developers with modularity and maintainability.
- Reduced capture time by 300ms during a site event, implemented an automated script for efficient future incident investigation.
- Winner of an internal hackathon, invented a new way of taking panoramas with wearable cameras.

FullRing Technology, Trackwork Construction & Design **September 2019 – August 2020**
Software Engineer Taichung City, Taiwan

- Surveyed and maintained the beautiful Alishan Historical Forest Railway with care and love.
- Established a custom-built railway assessment system which decreased both costs and set up time by 95%.
    - Developed a sensor prototype by integrating mpu6050 Gyro-Accelerometer with a GPS receptor.
    - Designed a data visualization and interaction GUI using PyQt, NumPy, Matplotlib, and Google Earth.
    - Verified results by generating verification data through surveying 55 km of mountain railway from sea level to 7000 feet.

Los Alamos National Laboratory, National Security **July 2014 – September 2018**
Data Researcher & Software Engineer Los Alamos, New Mexico

- Detonate explosives in the Nevada desert and crunch the collected data in order to monitor explosions in other country's deserts.

PROJECTS

Meili Technologies Startup **Fall 2020 – Present**

- Prototyped in-cabin health monitoring solution for autonomous vehicles. Interviewed 100+ drivers and riders concerning AV.
- Winner of 2021 Cornell Tech startup award of $100,000 prize out of 50 teams.

QQ Browser Textbook RSA attack & fix, Password-Based Authenticated Encryption **Summer 2021**

- Exploited QQ browser's hybrid encryption with CCA2, proposed a better scheme using OAEP padding and sender verification.
- Investigated insecure code on StackOverflow, demonstrated its vulnerability to brute-force and padding oracle attack.
- Improved SO answer's security by incorporating message authentication code and PBKDF to the encryption scheme.

Minitorch, (Python, CUDA) **Fall 2020**

- Developed a tensor class for training both feedforward and convolutional neural networks on CPU and GPU backends.
- Implemented the training workflows to include backpropagation featuring GPU acceleration using Numba and Cuda.

Autonomous Truck Mapping and Tracking (Python, Linux, ROS) **Spring 2019**

- Utilized Simultaneous Localization and Tracking (SLAM) and Adaptive Monte Carlo Localization (AMCL) to develop Paccar (truck company)'s first spatial localization and mapping pipeline using the Robot Operating System (ROS) on Linux.
- Overcame scarce landmarking to generate Paccar's initial test track map using LIDAR imaging.

EDUCATION

Cornell Tech | Cornell University **August 2020 - July 2021**
Master of Engineering New York City

- **GPA: 3.8 / 4.0 | Notable Coursework:** Machine Learning Engineering | Intelligent Autonomous System | Computer Vision | Interactive Device Design | Bio-Inspired Multi-Agent Systems
- **Awards:** Cornell Tech ECE Merit Scholarship

University of Washington **September 2016 - June 2019**
B.S. in Mechanical Engineering Seattle

- **GPA: 3.32 / 4.0 | Notable Coursework:** Computer Programming| Data Structures and Algorithms| Artificial Intelligence
- **Awards:** Dean's List 2018, 2019| J. Robert Oppenheimer Scholarship| UW Purple and Gold Scholarship| LANL Scholarship