Everett Key

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SKILLS

Languages: C++ | Python [Pytorch, Numpy, Matplotlib, Pandas] | SQL | Java | PHP | JavaScript | HTML | Matlab | R
Tools/Environment/Standards: Linux | Jira | Git/Mecurial | HTTP/HTTPS | Vim | AOSP | ROS

WORK EXPERIENCE

Meta Reality Labs, Wearable Camera   **January 2022 – January 2023**
Software Engineer   Burlingame, California
- Designed an API for Meta's new camera product, serving 6+ in-house or 3rd party fusion algorithms to capture quality images.
- Developed an automated testing suite that evaluates camera capture pipeline on virtual machines and/or physical devices.
- Triangulated and eliminated 300ms of capture latency using said testing suite during a production event.
- Won an internal hackathon out of 10 teams by inventing a new way of taking panoramas with wearable cameras.

FullRing Technology, Trackwork Construction & Design   **September 2019 – August 2020**
Software Engineer   Taichung City, Taiwan
- Built a custom railway calibration sensor system with software that has 90% less cost and overhead compared to its predecessor.
- Prototyped a ride quality sensor by integrating commercially available Gyro-Accelerometer, GPS, and Arduino.
- Developed a sensor controlling UI/UX that also provides aerial visualization of railtrack health maps.
- Studied product feasibility by field testing sensor through 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
- Developed a custom traffic video monitoring algorithm with 95% accuracy under significant security and resolution constraints.
- Detonate explosives in the Nevada desert to collect high speed camera images to verify hydrodynamic physics simulation models.

PROJECTS

Computer Vision (Python)   **Spring 2021**
- Created a panorama autostitcher using Harris corner feature detection, RANSAC, and weighted normalization.
- Built algorithms for photometric stereo, plane sweep stereo, and depth map reconstruction.
- Distinguish between dog and hotdog using Alexnet, and fool the Alexnet, ultimately generating the 'perfect' image of the class.

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:** Digital Signal Processing | Computer Vision | Interactive Device Design
- **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