Everett Key

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SKILLS

C++ | Python [Pytorch, Numpy, Matplotlib, Pandas] | Java | JavaScript | Matlab | R

WORK EXPERIENCE

Meta Reality Labs, Wearable Camera **January 2022 – January 2023**
Software Engineer Burlingame, California

- Consolidated the workflow of 6 fusion algorithms by creating an API, providing modularity and maintainability to developers.
- Reduced capture time by 300ms during a production event; expended testing tools for efficient future incident investigation.
- Improved image quality in the sharing pipeline by affixing device info in video metadata.
- Winner of an internal hackathon, invented a new panorama experience 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 dashcam prototype by integrating video camera with GPS receptor and mpu6050 Gyro-Accelerometer.
    - Designed data visualization UX using PyQt, NumPy, Matplotlib, and Google Earth.
    - Verified results by collecting verification data over 55 km of mountain railway from 0 to 7000 feet above sea level.

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