Everett Key

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TECHNICAL SKILLS

Technical Skills: Python [Pytorch, Numpy, Matplotlib, Pandas] | C++ | Matlab | R | SolidWorks | Fusion360 | Julia
Exams: Certified SolidWorks Professional | NCEES Fundamental of Engineering (Mechanical) Exam

WORK EXPERIENCE

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

- Designed a camera controller interface managing 6+ image fusion algorithms, providing modularity to the image capture pipeline.
- Reduced image capture time by 300ms during a production event; expended testing tools for efficient future investigation.
- Winning an internal hackathon by inventing a new way of taking panoramas with wearable cameras.

FullRing Technology, Trackwork Construction & Design **2019 – 2020**
Systems Engineer & Technician Taichung City, Taiwan

- Established a custom railway assessment system that has 95% less cost and overhead as compared to the legacy method.
    - Prototyped a ride quality sensor by integrating commercially available Gyro-Accelerometer, GPS, and Arduino.
    - Developed a sensor control 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.
- Designed, manufactured, and installed non-abrasive lifting brackets that support delicate 28 ton historic locomotives.
- Overcame harsh terrain and unpredictable weather to survey and maintain the beautiful Alishan Historical Forest Railway.

Los Alamos National Laboratory, National Security **2014 – 2018**
Research Engineer Los Alamos, New Mexico

- Developed and evaluated traffic monitoring algorithms achieving 95% accuracy under strict security and resolution constraints.
- Detonated explosives in the Nevada Test Site to collect high speed photos for verifying hydrodynamic simulation models.

PROJECTS

Swarm System (Biologically Inspired Multi-Agent) **Cornell Collective Embodied Intelligence Lab**

- Developed and evaluated methods of deep neuroevolution and reinforcement learning for emergent control of foraging stigmergy in multi-agent swarms.

Autonomous Truck Mapping and Tracking **Paccar**

- 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.
- Navigated through scarce landmarking to generate Paccar's initial test track map using LIDAR imaging.

CAD Lead & Team Mentor **FIRST Robotics Competition**

- Created 120+ detailed working drawings with manufacturing specifications and actively supervised the quality control processes.

Commercial Aircraft Structural Engineering - Empennage Repair **Boeing**

- Investigated empennage damage, proposed repair plan and cost analysis in collaboration with Boeing liaison.

Electric Aircraft Industry Adoption **General Electric Aviation**

- Evaluated 31 EAV companies and presented them as potential partners for GE's engine testing facilities.
- Received General Electric Spring 2021 Dare to Lead award as a 5 person team.

Minitorch **Cornell Tech**

- 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.

EDUCATION

Cornell Tech at Cornell University | *M.Eng. in Electrical and Computer Engineering* **2020 - 2021**
Awards: Cornell Tech ECE Merit Scholarship
Notable Coursework: Swarm Robotics | Digital Signal Processing | Interactive Device Design | Intelligent Autonomous System

University of Washington | *B.S. in Mechanical Engineering* **2015 - 2019**
Awards: Dean's List 2018, 19 | J. Robert Oppenheimer Scholarship | UW Purple and Gold Scholarship | LANL Scholarship
Notable Coursework: System Dynamics | Computer Aided Design | Manufacturing Processes