

# Everett Key

San Mateo, CA | 505-577-7093 | [everett.k.key@gmail.com](mailto:everett.k.key@gmail.com)  
Website: [EverettKey.com](http://EverettKey.com) | LinkedIn: [Everett-Key](https://www.linkedin.com/company/everett-key/) | GitHub: [EverettKey](https://github.com/everettkey)

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## TECHNICAL SKILLS

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

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## WORK EXPERIENCE

**Meta Reality Labs**, Wearable Camera **01/2022 – 01/2023**  
*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 **07/2019 – 08/2020**  
*Software Engineer* Taichung City, Taiwan

- Built a custom railway assessment 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 **06/2014 – 09/2018**  
*Data Researcher & Software Engineer* Los Alamos, New Mexico

- Developed and evaluated traffic monitoring algorithms achieving 95% accuracy under strict security and resolution constraints.

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## PROJECTS

**Meili Technologies Startup** (Python, C++) **07/2021 – 11/2021**

- Prototyped in-cabin health monitoring solution for autonomous vehicles using TI mmWave sensor connected through UART.
- Winner of 2021 Cornell Tech startup award of \$100,000 prize out of 50 teams.

**QQ Browser Textbook RSA attack & fix** (Python) **07/2021**

- 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) **08/2020 – 12/2020**

- 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) **01/2019 – 07/2019**

- 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.

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## EDUCATION

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

- **Notable Coursework:** Computer Networking | 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** **2015 - 2019**  
*B.S. in Mechanical Engineering* Seattle

- **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