Keenan McConkey

k.t.mcconkey@gmail.com • (415) 216-7605 • San Francisco, CA

Work Experience

Operations Engineer, Brock Solutions — 2025–Present — San Francisco, CA

- Relocated to SFO to support deployment, integration, and validation of real-time baggage sortation software in a live airport environment
- Integrated Brock software with industrial PLCs, scanners, scales, cameras, motors, and control hardware from multiple OEMs; validated system behavior using SCADA/HMI tooling
- Developed Python-based data analysis and test scripts to evaluate long-term system performance, detect failure modes, and generate actionable insights for airport operations teams
- Served as technical interface between software, hardware vendors, manufacturing and installation teams, and airport operations; led root-cause investigations to resolution
- Coordinated with Brock's off-site technical support team, prioritizing reliability, uptime, and safety in a 24/7 operational environment

Software Engineer, Brock Solutions — 2023–2025 — Vancouver, BC

- Full-stack developer on a net-new, client-facing customs clearance software suite using C#, React, and MS SQL Server
- Led a system upgrade and integration effort at YYC Airport, validating new software against existing baggage-handling control systems under tight operational timelines
- Designed and deployed a Docker-based distributed microservices architecture in Azure; managed infrastructure as code using Terraform
- Built automated tests and validation workflows as part of a modern CI/CD pipeline using GitHub
- Mentored junior developers through pair programming and code reviews while practicing test-driven development
- Contributed to and modernized a large legacy C# codebase while developing deep domain expertise

Junior Developer, Sanctuary AI — 2022 — Vancouver, BC

- Developed and tested software components for a ROS-based humanoid robot using Python and C++, with a focus on physics simulation
- Created automated scripts and quantitative metrics to evaluate sensor visualization, object tracking, and dexterous manipulation
- Collaborated closely with robotics, controls, and hardware teams to debug simulation-to-real discrepancies

Embedded Systems Co-op, Voltsafe — 2020 — Vancouver, BC

- Developed embedded C++ firmware for an ESP32-based Bluetooth-enabled IoT product deployed in consumer environments
- Designed and deployed a Linux-hosted user authentication service, including a NoSQL database and Python-based backend services

Mechatronics Co-op, CARIS Robotics Lab — 2019 — Vancouver, BC

- Developed a Python-based machine learning and testing framework for real-time terrain classification in assistive robotics
- Integrated ML software with physical sensors and actuators; validated performance across varied environmental and operating conditions

Engineering Intern, Max Planck Institute — 2018 — Hamburg, Germany

- Conducted experimental work in electron-gun imaging at the Institute for the Structure and Dynamics of Matter
- Developed Python software to control experimental equipment and designed mechanical components for experimental systems

Education

Bachelor of Applied Science in Engineering Physics, University of British Columbia — 2016–2021

- GPA 3.75; Graduated with Distinction; Three-time Dean's Honour List recipient; Specialization in Computer Science

Projects

BarPath App — iOS & watchOS Workout Tracking Platform

- Designed and implemented a Python-based machine learning pipeline for exercise classification and repetition counting using IMU data
- Performed signal preprocessing, feature extraction, and supervised model training to distinguish exercise modalities and count exercise reps
- Built a cloud-backed data ingestion and storage layer using MongoDB to support labeled data collection, and model evaluation/tuning

TrashBot — Autonomous Edge-Computing Mobile Robot

- Developed an autonomous mobile robot on NVIDIA Jetson TX2, leveraging GPU-accelerated inference for onboard perception
- Integrated a ROS-based navigation stack with SLAM for real-time localization, mapping, and goal-directed path planning
- Implemented real-time object detection and classification pipelines using PyTorch to identify and localize trash targets