Keenan McConkey

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WORK EXPERIENCE

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

• Developed Azure tools to monitor and analyze system telemetry from 24/7 airport operations
• Built data pipelines to process operational metrics and enable data-driven insights for airport stakeholders in Python
• Led a team of 3 during a system upgrade, integrating new .NET software with existing baggage-handling control systems under tight 1-month timeline
• Became a SME in airport controls and operations software; used knowledge to lead support team in diagnosing and resolving critical airport issues in no-downtime environment

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

• Developed full-stack customs clearance software suite using Python, TypeScript, React, C#, and MS SQL Server
• Built RESTful APIs and backend microservices to orchestrate data flows in real time airport setting
• Designed and deployed Docker-based microservices architecture in the cloud; managed infrastructure as code in Terraform
• Created CI/CD pipeline using GitHub Actions to automate compilation, testing, code analysis, and release processes
• Collaborated with product managers, designers, and operations teams to translate requirements into production software
• Mentored developers through code reviews while practicing test-driven development and modern best practices

Software Co-op, Sanctuary AI — 2022 — Vancouver, BC

• Developed software enabling researchers to interface with 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 automate experimental equipment and control data acquisition in a scientific research lab

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