Marco Scarlata

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Skills

Languages : C++, Python, Kotlin, Java, JavaScript
Frameworks: gRPC, Protocol Buffers, Boost (Asio), Flask, Django, React, Svelte
Libraries/Tools: CMake, GTest, Tensorflow, TFLite, Keras, Pandas, NumPy, SQL, Git, Bazel/Blaze, LLVM/Clang

Experience

Google | **Software Engineer** — Mountain View, CA
WatchSW AI/ML & Algorithms — *Sep 2022 – Present*

- Launched **One-Handed Gestures** (Double Pinch & Wrist Turn), a novel, low-power ML gesture recognition algorithm (**C++, Python, TFLite**) for the Pixel Watch, partnering with a Research Scientist to lead end-to-end integration, on-device optimization, and sensor fusion (IMU & physiological signals); achieved over **92% accuracy**, **1ms inference**, and <**250ms E2E latency**.
- Architected the **Gesture Hardware Abstraction Layer (HAL)** to ingest and transform sensor events for the platform service, decoupling the algorithm to enable vendor-agnostic implementations; introduced bidirectional communication for context-aware sensing (e.g., display state), facilitating cross-device orchestration with xDevices such as **XR glasses** and reducing latency by **30%** through the the consolidation of abstraction layers.
- Owned and optimized the Low Latency Off-body Detection (**LLOB**) algorithm – a core component for most algorithms and system performance – resolving false detections and power regressions, raising reliability across all shipped devices.
- Implemented on-device telemetry and ETL dashboards; led Gestures and LLOB bug triage, closing **1000+ bugs**.
- Mentored teammates on sensor integration and MCU-level development; led design reviews and authored the *"MCU-based Practical Telemetry Guide"* referenced by **24+ engineers**.

Cloud Asset Inventory & Search

- Productionized a scalable C++ solution to enrich Cloud Asset Inventory with structured metadata for cloud-managed assets, impacting **90%+** of GCP resources and boosting adoption to **500,000+** active users.
- Enabled launch of Asset Enrichment in the Asset Query System (**C++, SQL, Spanner**), powering efficient queries across **275+** GCP asset types for SCC customers.
- Drove cross-team optimization of a workflow runner (**gRPC, Borg, Python**), reducing development time by **25%** resulting in **10 SWE weeks** saved.

OpenSesame | **Software Engineering Intern** — Portland, OR
Front-End Division — *Jun 2020 – Aug 2020*

- Enhanced course language selection with searchable dropdowns (**Angular, TypeScript**); built and ported 10+ end-to-end tests from **Drupal** to **Angular/Selenium**, expanding QA coverage
- Resolved 6+ sprint bugs—including a critical IE landing page issue—by extrapolating burn-down processes and strengthening test automation with Behat API, and unit tests

ANDSystems | **Machine Learning Intern** — Ulaanbaatar, Mongolia
Machine Learning Team — *Jun 2019 – Aug 2019*

- Analyzed the purchase history of **100,000+** users buying coupons by regression analysis using **Python, Pandas, NumPy, and PyTorch**, identifying an under-marketed sector in sales that increased revenue by 10%
- Launched an MVP module-based recommender system with caching for an e-commerce platform (*BananaMall*) with 10,000+ downloads on the Playstore and 100,000+ users, using **Python, SKLearn, and DynamoDB**

University of Rochester | **Teaching Assistant & CETL Tutor** — Rochester, NY
Computer Science Department — *Sep 2019 – Dec 2021*

- Taught students in *Web Programming, Data Structures & Algorithms, and Formal System & Computations* courses
- Conducted tutoring sessions with 15+ college students, resulting in a 30% increase in their respective course grades

Education

University of Rochester — Rochester, NY
Bachelors in Computer Science | *Minor in Psychology* — *Aug 2018 – May 2022*

- **Major GPA**: 3.5/4.0 – Consecutive Dean's List Recipient
- **Relevant Courses**: Data Structures & Algorithms | Formal Systems & Computation | Web Programming | Human Computer Interaction | Intro to Artificial Intelligence | Database Systems | Natural Language Processing |
- Dean's Scholarship & Rochester National Grant Awardee