

Richard Echegaray

(628)-283-7180 | richardechegaray@outlook.com | San Francisco, CA | [LinkedIn](#) | [Portfolio](#)

Work Experience

Software Engineer (E4), Meta Platforms, Inc. – Burlingame, CA Aug. 2022 – Aug. 2025

AUDIO PLATFORM & SYSTEMS ENGINEERING – Built core audio systems and policies for next-gen wearable devices

- Engineered audio systems for wearables like Ray-Ban Metas, supporting core platform and cross-device audio features
- Upgraded SoC-to-MCU audio signaling from STP to latest in-house protocol on AOSP, ensuring smooth audio traffic
- Developed DSP/AHAL logic to support advanced audio usecases such as Adaptive Volume Control and Loudness Boost
- Designed audio APIs for internal SDK to expose device-level controls (Play, Mute, Unmute) to higher-level services
- Led the refresh of system sound cues (earcons) across product families, enhancing user audio feedback

CONCURRENCY & AUDIO POLICY DEVELOPMENT – Designed logic for fluid audio transitions and smart routing across devices

- Implemented concurrency-handling logic in *Java* for seamless transitions between conflicting audio use cases
- Updated device audio policy to transfer audio from phone to device seamlessly as user would don/doff glasses
- Enhanced MetaAI assistant ducking policy, preventing unnecessary volume dips while user engages with assistant

DEBUGGING, TOOLING & RELIABILITY – Improved product stability and quality through debugging, tooling, and code coverage

- Fixed 10+ launch-blocking volume/concurrency-related bugs – e.g.) phone call volume getting stuck at its minimum
- Instrumented Bluetooth audio paths with telemetry for session tracking and crash recovery diagnostics
- Drove *C/C++* code coverage across audio and DSP components as DRI, contributing to ~25% of DSP tests and boosted total team coverage from 35% to 66% in 2024; ranked top 6 across org over test sprint and recognized by leadership

Software Engineer, Daanaa Resolution – Vancouver, BC May 2021 – Aug. 2021

- Built a *WPF (C#)* app to interface with a custom IC, integrated MSSQL (via EF6) and ScottPlot for data visualization

Project Coordinator, RecycleSmart Solutions – Richmond, BC May 2020 – Dec. 2020

- Developed *C* firmware for UART communication between nRF52 MCU and TI PGA460 ultrasonic processor
- Created Python and batch scripts to automate compile-time documentation and Git tag/version tracking
- Built a software test suite to evaluate ultrasonic sensor performance across multiple profile configurations

Embedded Developer, RST Instruments Ltd. – Maple Ridge, BC Jan. 2019 – Apr. 2019

- Scripted Python tests with Robot Framework to validate Modbus & serial API compatibility across legacy systems
- Developed HTML-reporting wrapper to make automated test results accessible for manufacturing teams
- Shipped *C* firmware with SPI communication to STM32, integrating a software FIFO for $\pm 0.002^\circ$ precision in tilt sensing

Projects and Hackathons

1st Place @ nwHacks 2020, Western Canada's largest Hackathon (769 participants) – bit.ly/nwHacks20 Jan. 2020

- Designed Android app to reduce food waste using Azure Speech, Firebase MLKit, and Firestore for grocery tracking
- Created recipe-suggestion API and pitched end-to-end solution, earning 1st place for usability and real-world impact

3rd Place @ Autonomous Robotics Competition – bit.ly/robotPics May – Aug. 2019

- As software lead: programmed a fully autonomous robot that could detect and pick up objects via PID control in *C++*
- Created and implemented an integration testing plan for of our robot throughout our iterative design process
- Applied signal convolution to detect IR beacons of specific frequencies to travel off-tape and detect IR beacons

Education

The University of British Columbia – BAsC, Engineering Physics (GPA: 3.85) Sep. 2018 – May 2022

Skills

Languages: Java, C/C++, Python, SQL, MATLAB, JavaScript, TypeScript, C#

Frameworks/Technologies: AOSP, DSP/MCU, Linux, OpenCV, Scikit-learn, Unity, Django, Keras, TensorFlow, Next.js

Instrumentation: Oscilloscope, Function Generator, Multimeter, Logic Analyzer