

# Michael McIntosh

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## Profile

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Client-first Software Engineer and U.S. Navy Veteran with production experience delivering secure, scalable applications across mobile and web platforms. A graduate of the rigorous Microsoft Software & Systems Academy (MSSA) and Code Platoon Full Stack Bootcamp, combining strong cloud fundamentals with clean architecture patterns. Proven ability to leverage Azure, AWS, and Google Cloud to support robust cross-platform development. Known for maintaining reliability under pressure, clear communication, and shipping thoughtfully developed, privacy-safe features.

## Technical Skills

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- **Languages:** C++, C#, TypeScript, Python, Dart, JavaScript, SQL.
- **AI & Computer Vision:** PyTorch, TensorFlow, ONNX, OpenCV, Edge AI/On-Device Inference.
- **Mobile & Web:** Flutter, React, .NET, Clean Architecture, Responsive UI Design.
- **Cloud & Backend:** Microsoft Azure, AWS, Google Cloud, Firebase, MongoDB, REST APIs.
- **Data & Tools:** Data Visualization (Streamlit/Python), Matplotlib, Pandas, NumPy, Git, CI/CD pipelines.

## Links

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[Github](#), [LinkedIn](#), [Portfolio Website](#)

## Recent Projects

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### Golf Goorder, Golf Stat Tracking App (iOS & Android)

2025 — Present

[Apple App Store link](#) / [Google Play Store link](#)

**Golf Performance & Social App:** Flutter/Dart, Firebase Suite (Auth, Functions, Firestore, App Check), GPS/Location Services

- **Real-Time Multiplayer:** Built a robust synchronization engine using **Cloud Functions** and **Firebase triggers** to power live, cross-device party modes. Implemented atomic transactions and server-side state management to handle race conditions and ensure consistent scoring for all players.
- **Engineered High-Precision GPS Context:** Developed a battery-optimized location service that auto-detects holes and teeboxes to intelligently validate shot data, using debounced updates to ensure high accuracy with minimal user intervention.
- **Enterprise-Grade Security:** Secured backend resources with **Firebase App Check** for device attestation and strict least-privilege security rules, protecting against API abuse and unauthorized access.
- **Data-Driven AI Features:** Integrated deep analytics to drive product roadmap and currently prototyping **AI/ML benchmarks** to compare user performance against peer cohorts for personalized strategy insights.

### Computer Vision Photo Gallery Cleaner (Android/iOS/Mac/PC)

2025

**AI-Powered Gallery Cleaner Stack:** Flutter/Dart, Python (PyTorch/TensorFlow), ONNX Runtime, MobileNetV3, Photo Manager

- **Engineered Custom Edge AI:** Trained and optimized a lightweight **MobileNetV3** computer vision model to distinguish screenshots from photography, converting it to **ONNX** for high-efficiency mobile deployment.
- **High-Performance On-Device Inference:** Implemented a local inference engine using to process image tensors directly on the device CPU, ensuring zero-latency performance and absolute user privacy without cloud API calls.
- **Scalable Asset Management:** Architected a robust scanning service capable of processing thousands of gallery assets via batching and offset management, featuring pause/resume capabilities and dynamic confidence thresholding.

### Photo Journal (Web)

2024 — Present

**Cross-Platform Photo Journal Stack:** Flutter/Dart, Firebase (Firestore, Storage, Auth, Hosting), Provider, EXIF

- **Architected Modular Core:** Designed a testable **Provider + Repository** architecture to decouple UI from data logic, ensuring code maintainability and a seamless, **offline-tolerant** user experience.
- **High-Performance Data Modeling:** Engineered complex Firestore schemas and **composite indexes** to enable sub-second, multi-variable filtering (date, tags, user) across scalable datasets.
- **Secure Media Pipeline:** Built a robust image upload system featuring resumable transfers and **least-privilege Security Rules**, while auto-enriching entries by extracting

### Tutor Me AI, Human-Centered AI Tutor Website

2025

**Adaptive AI Tutor Stack:** Python, Streamlit, OpenAI, Accessibility (ARIA/WCAG)

- **Engineered Socratic AI Core:** Architected a persona-adaptive chat engine that strictly enforces **Socratic questioning** over direct answers, utilizing advanced prompt engineering and guardrails to drive active user learning.
- **Accessibility-First Design:** Delivered a fully **WCAG-compliant** interface featuring ARIA live regions, seamless keyboard navigation, and voice interaction, ensuring an inclusive experience aligned with US Government UX standards.
- **Robust Feature Ecosystem:** Implemented dynamic quiz generation from chat history, session persistence, and a clean **Markdown-to-HTML export pipeline**, supported by a modular, testable codebase.

## Education

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### B.S. Software Engineering AI/ML

Bellevue College

Bellevue, WA, Jan 2023 — Dec 2025

### Cloud Application Development

Microsoft Software and Systems Academy

Jun 2024 — Nov 2024

### Full-Stack Web Development

Code Platoon - Coding Bootcamp

Oct 2022 — Jan 2023