

Nick Montelibano

Principal Software Consultant · Medical Devices & Embedded Systems

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SUMMARY

Principal software consultant — 6 FDA medical device programs delivered (5 IDE-approved, 1 510(k)-cleared), shipping on thousands of fielded units. A decade architecting safety-critical embedded and connected systems under FDA design controls and IEC 62304. Through Fractal Logic, I own technical direction end-to-end across concurrent client engagements, leading internal teams and third-party vendors.

EXPERIENCE

Vantage Medtech

Kansas City, MO

Senior Software Consultant

May 2025 – Present

- Advised leadership on the technical roadmap and architecture for an in-house user-interface platform now adopted across multiple product lines, with several new device programs building on it each year.
- Eliminated a deep platform memory leak — cutting growth from 2.5 MB/hour to zero — that had been exhausting memory and forcing a full system restart roughly every two days.
- Led a software program adapting the company's platform to customer-specific requirements, owning architecture and delivery across the engagement.

Cadence Neuroscience

Redmond, WA

Senior Software Consultant

Jan 2023 – Present

- Served as technical lead and the device maker's technical authority, directing a four-engineer third-party firm over two years to build the patient-controller mobile app — owning requirements, architecture decisions, and acceptance.
- Designed and built five applications spanning four data-transport protocols (BLE, USB, Wi-Fi, inter-Android IPC), along with the communication architecture for an implantable neuromodulation system.
- Authored and owned the software requirements for the consumer-facing patient controller — now IDE-approved and in use by research staff ahead of human clinical trials.
- Built the AWS backend (S3, DynamoDB, Cognito) and a Samsung Knox-managed kiosk deployment.

Full Swing Golf

Carlsbad, CA

Software Consultant

Oct 2021 – Present

- Owned the complete software stack for a golf simulator shipped on thousands of units — embedded Linux BSP, on-device application logic, Windows PC communication software, an automated test suite, and cloud infrastructure.
- Architected the embedded Linux application processing four independent cameras capturing at 2,500 fps, optimizing the FPGA-to-PC data pipeline to minimize shot latency.
- Built the Windows manufacturing and calibration software used to produce and field thousands of simulators.

Minnetronix Medical (now part of Forj Medical)

St. Paul, MN

Senior Software Engineer

Jun 2016 – Oct 2021

- Delivered five medical device programs over five years, leading teams of up to five software engineers.
- Led development of a real-time, embedded 3D-rendering Class C diagnostic device on QNX with Qt - optimized performance to fluidly run on resource-constrained hardware
- Architected multiple real-time embedded microcontroller systems - implantable stimulators, electroporation devices, and wireless controller for an implantable devices.
- Delivered the company's first Android based BLE medical device controller, owning the UI and BLE communications protocol.

SKILLS

 Technical Leadership & Architecture

Scalable software architecture, requirements specification, technical lead, vendor/contractor management

 Medical Device & Regulatory

FDA design controls, IEC 62304, ISO 14971, verification & validation

 Embedded & RealTime

Embedded Linux, microcontrollers, FPGA integration

 Connectivity & Protocols

Bluetooth / BLE, USB, gRPC / Protobuf

 UI & Application

Performant and responsive embedded UI, desktop, mobile, 3D rendering

TECHNOLOGIES

 Languages

C++, Kotlin, C#, Python, Go, C, Typescript, Javascript, Rust

 Tools & Platforms

Qt, AWS, STM32, nRF, Node.js, Git, CMake, Docker, CircleCI

 Operating Systems

Yocto, Android, Windows, FreeRTOS, SafeRTOS, QNX

AWARDS

Engineering Excellence Award

2017

Minnetronix Medical

Recognized for solving a graphicsintensive problem in the embedded 3Drendering space; prevented months of development by replacing legacy OpenGL with a modern JavaScriptbased solution.

ISU Hackathon

2015

Iowa State University

Designed and built a robot that teaches kids to program by scanning RFID instruction cards, integrating lowlevel GPIO/SPI hardware, Python application logic, and a clean web GUI.

EDUCATION

Iowa State University

Bachelor of Science, Computer Engineering

Ames, IA • Aug 2012 – May 2016