

XOWANG

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Alameda, CA
(San Francisco Bay Area)

Profile

I lead teams that turn inventions into products. My experience spans wires, bytes, and factories. Specialties: wireless, motors, Linux & embedded drivers, graphics, bare metal boot/OTA

Experience

Freelance & Personal Projects 2023

Motor Control · IoT Sensor Nodes · Open Source · Motorcycle Prototyping · Web Graphics

Google Mountain View & San Francisco, CA · 2013–2022

Fuchsia Operating System

- Architected and certified Google's first homegrown Bluetooth stack, comprising Low Energy (LE) and Classic technologies, using C++14/17/20 and Rust.
- Devised protection against Bluetooth security attacks including KNOB and BIAS.
- Shipped Fuchsia's first release on Google Home devices by migrating Linux users "over the air."

Cloud Software, Firmware, & Hardware

- Formulated boot and diagnostics stacks for two generations of novel Google/IBM cloud servers.
- Conceived and built peripheral memory protection (IOMMU) into Google-bespoke Linux drivers.
- Crafted harness to detect faults in 192-thread parallelism and weakly-ordered (non-x86) memory.
- Developed and traveled for server prototyping, factory validation, and datacenter deployment.

Seurat Virtual Reality (Daydream VR)

- Developed ray-tracing rendering algorithms for cloud-streamed virtual reality content.
- Shipped development kit and Star Wars demo at Google I/O 2017.

OpenBMC

- Bootstrapped Yocto-based server management stack, now a Linux Foundation project.

Apple Cupertino, CA · 2012

ARM Embedded Real Time Operating System (RTOS)

Solid Angle Madrid, ES · 2011–2013

Arnold Renderer (now Autodesk Arnold)

- Developed ray-tracing algorithms optimized for multithreaded SIMD hardware.
- Received 2021 Primetime Emmy for engineering contributions to visual effects (VFX).

Education

Georgia Institute of Technology B.Sc. Computer Science · Atlanta, GA · 2013

Co-creator, world's first cloud 3D printing system · Co-founder, Invention Studio prototyping lab

Skills

C/C++, Rust, Git, microcontrollers (ARM, Atmel), embedded Linux, mechanical design (SolidWorks, Fusion 360), PCB design (KiCAD, EAGLE), electronics bench, machining, overseas manufacturing

Projects

Combat robotics including BattleBots TV series (ABC, Discovery)
Bespoke brushless motor control (hardware and firmware)