# AMIR NATHOO

Portland, OR | 503.867.5556 | amir.nth@gmail.com | github.com/amirna2 | linkedin.com/in/anathoo

## SOFTWARE ENGINEER | ROBOTICS & SYSTEMS INTEGRATION

IoT | Robotics | Teleoperation | Embedded Systems | Applied AI

Software engineer with 30 years building production-grade robotics, IoT, and media systems. At Formant, I develop **robot–cloud interfaces** that power observability, monitoring, and control, including **ROS/ROS2 bridges, telemetry pipelines, low-latency video streaming, and AI tooling**. Skilled in **C/C++, Go, Python, GStreamer, WebRTC, gRPC, Linux**, with a track record of turning prototypes into reliable products and integrating robotic subsystems into scalable platforms..

### TECHNICAL SKILLS

**Proficient:** C/C++, Linux, Python, Go, Bash, Gstreamer, gRPC, WebRTC

**Competent:** JavaScript, SQL/NoSQL/TimeSeries databases, AWS, Containers (Docker), CI/CD

### CORE COMPETENCIES

Robotics & Teleoperation | Systems Integration | System Architecture| Real-Time Media Streaming

Robot–Cloud Interfaces | Telemetry & Data Pipelines | Debugging on Hardware

Agile Development | Edge/Cloud Computing | Hardware/Software Integration

### PROFESSIONAL EXPERIENCE

**FORMANT** **04/2024 - Present**

**Senior Software Engineer (Teleoperation)**

**Tech Stack:** Python, Go, TypeScript, C/C++, Shell Script, Linux, gRPC, WebRTC, GStreamer, ROS1/ROS2, Docker.

- Enhanced robot–cloud data/control planes by extending the Go-based gateway, enabling real-time interactions and subsystem integration across ROS2, telemetry, video pipelines and agentic AI systems.
- Resolved deployment-blocking issues during customer robot integrations, delivering fixes within hours, including rapid TypeScript/React debugging when required.
- Led redesign of ROS2 bridge and media encoder, reducing CPU load by 40% and improving real-time data ingestion, strengthening platform scalability for production robot deployments.
- Built model-driven simulators to reproduce realistic fleet conditions, accelerating AI testing and reducing reliance on physical robot availability.

**SUSTAINIC LABS** **01/2023 - 12/2023**

**Founder, CEO**

**Tech Stack:** C, C++, Python, Linux, Go, NodeRED, LoRa, Arduino, VueJS3, MQTT, InfluxDB, MongoDB.

Solo founded an agri-tech startup providing cost-effective crop monitoring solutions to small farms.

- Led business development, hiring and operations.
- Developed the hardware/software MVP in 3 months, leading to one pilot deployment.
- Designed a mesh protocol, leveraging networking expertise and demonstrated the end-to-end solution.
- Prototyped a modular sensor system, resulting in 70% reduction in hardware integration time.

**CREATEME TECHNOLOGIES** **07/2022 - 01/2023**

**Senior Software Engineer**

**Tech Stack:** C, C++, Python, Linux, C#, .Net Core, CAN/Modbus, Azure Iot Hub, Azure DevOps.

Automated apparel manufacturing by designing and implementing software for connecting industrial machinery to cloud on-demand ordering systems.

- Quickly integrated into the team, contributing to key investor demos within two weeks by implementing IoT gateway software for apparel customization machines.
- Pioneered the system architecture for an IoT gateway, enabling apparel machinery to connect to the internet and facilitating cloud-based, on-demand apparel production orchestration.

**SANCTUARY AI** **09/2021 to 07/2022**

**Senior Software/Network Engineer**

**Tech Stack:** C, C++, Python, Linux, ROS2, Docker, GitLab CI, Bash, Websocket, MQTT, gRPC, GStreamer, AWS.

Contributed to the development of general purpose humanoid robots, focusing on continuous delivery of AI software, network architecture for remote teleoperation, and cognitive architecture implementation.

- Spearheaded the company's first-ever remote robotic teleoperation within two months, utilizing advanced VPN technology and Software Defined WAN architecture.
- Optimized development workflow by redesigning CI/CD infrastructure (GitLab CI), transitioning from weekly to daily automated software delivery and reducing deployment errors by around 40%.
- Enhanced real-time robot control by integrating MQTT and SRT protocols with ROS2 video streaming nodes, achieving ~100ms latency and smoother remote robots teleoperation.

**DESIGNATED DRIVER** **12/2020 to 08/2021**

**Senior Software/Network Engineer**

**Tech Stack:** Golang, C, C++, Linux, Ansible, GitLab CI, NodeJS, Bash, Websocket, MQTT, gRPC, GStreamer.

Transformed infrastructure-as-code for teleoperation software stack and managed cloud services.

- Accelerated software delivery by 25% through CI/CD adoption, test automation, and improved validation.
- Optimized provisioning tools, reducing deployment time from hours to minutes and improving reliability by 30%.
- Developed cloud-native architecture with AWS and MQTT, migrating NodeJS software to Go, boosting data processing by 40%.

**UBIQUITI NETWORKS** **03/2016 to 07/2020**

**Principal Software Engineer, Team Lead**

**Tech Stack:** Java 8, Go, JavaScript, Linux, Docker, MongoDB, WebSocket, WebRTC, RESTFul Web Services.

Inherited and turned around declining UniFi-Video product after team restructuring, rebuilding team and leading 5 engineers through complete product revival.

- Drove 210% product growth by adopting lean development and focusing on user value.
- Integrated 6 new camera models while overcoming significant technological debt within 3 years.
- Resolved 700+ bugs and 40+ critical security issues through comprehensive refactoring, agile practices, and collaboration with the cybersecurity team and HackerOne bounty program.

**ALTICAST** **01/2014 to 01/2016**

**Principal Software Engineer**

**Tech Stack:** C, C++, Python, Linux, HTML5, JavaScript, Yocto, Git, Gerrit, Docker, GStreamer, IP Streaming.

Leveraged media streaming domain expertise to expand home gateway solutions using newly deployed software platforms for powering cable video and broadband devices.

- Launched 1 new project and extended 2 others by redesigning existing media framework stack and integrating new UX/media streaming technology (cloud, open source).
- Achieved 30% reduction in project ramp-up time by building tools and automation for a new collaborative development environment.
- Invited to speak at RDK Users Conference (2014).

**SEACHANGE INTERNATIONAL** **07/2008 to 01/2014**

**Software Architect (2010 – 2014)**

**Principal Software Engineer (2008 - 2009)**

**Tech Stack:** C/C++, Java, Python, JUnit, Linux, GStreamer, MPEG, HLS.

Began working for Flashlight Engineering & Consulting in 2008, before acquisition by SeaChange in 2012.
Led the CableTV industry transition from proprietary solutions to cloud, open-source platforms. Spearheaded the development of the company's first headless gateway and contributed to the Comcast led Reference Design Kit (RDK) platform, powering 100M devices today.

- Generated $1.1M additional revenue leading a video gateway project, highlighted at major trade shows.
- Key in deploying Comcast Xfinity's first generation RDK set-top-box, reaching 8M U.S. households.
- Invited to speak at JavaOne conference (2010).
- Promoted to Software Architect in 2009.

***For prior employment history , please see LinkedIn profile: https://www.linkedin.com/in/anathoo***

## EDUCATION

**Master of Science (MSc) in Computer Science**
SUPINFO INTERNATIONAL UNIVERSITY, Paris, France
(Emphasis: Software Engineering, AI/Neural Networks, Computer Vision)

## OPEN SOURCE PROJECTS

**RadioMesh** **01/2020 to present**

RadioMesh is a toolkit library for building long-range, low-power radio mesh networks for IoT applications. It leverages Semtech LoRa radios and currently supports Arduino ESP32 micro-controller boards. Source repository: https://github.com/amirna2/RadioMesh.