

Lucas Barrena

Expert Software Developer

SUMMARY

- 14+ years in backend systems, Node.js, C/C++, GoLang, and embedded IoT firmware development.
- Developed AI chat product with Stripe payments, search service using LangChain and HuggingFace, and P2P WebRTC/RTMP features.
- Built custom SSH in JavaScript with UDP hole punching for firewall traversal and low-latency distributed systems.
- Rebuilt Solana stack in Node.js; created neural networks in SourcePawn and GoLang with genetic algorithms.
- Led international teams, conducted hundreds of code reviews, and managed hiring and technical training.

TECHNICAL SKILLS

Main Technical Skills	Node.js (5 yr.), C (2 yr.), C++ (2 yr.), JavaScript (5 yr.), Go (1 yr.)
Programming Languages	C (2 yr.), C++ (2 yr.), Go (1 yr.), JavaScript (5 yr.), Solidity (1 yr.)
AI & Machine Learning	Hugging Face, LangChain
JavaScript Frameworks	Node.js (5 yr.)
Platforms	Arduino (1 yr.)
Mail / Network Protocols / Data transfer	RTMP, UDP, WebRTC
SDK / API and Integrations	Stripe
Other Technical Skills	ATmega328P (1 yr.), ESP32 (1 yr.)

WORK EXPERIENCE

Software Developer (AI Chat Product with Stripe Payments and Search Service)

Duration: 2025 – Present

Summary:

- Developed a complete AI chat product integrated with Stripe payments and a search service utilizing LangChain, HuggingFace Transformers, and a vector database



- Added peer-to-peer features to WebRTC calls and RTMP streams to enhance real-time communication capabilities

Responsibilities:

- Designed and implemented the AI chat product and payment integration.
- Developed the search service using advanced AI and vector database technologies.
- Implemented P2P features for WebRTC and RTMP streaming to improve connectivity and performance.

Technologies: Node.js, P2P, LangChain, HuggingFace Transformers, vector database, WebRTC, RTMP, Stripe

Software Developer (SSH Built from Scratch with Peer-to-Peer Connections)

Duration: October 2023

Summary: Developed an SSH implementation from scratch in JavaScript featuring peer-to-peer connections and reliable firewall bypass using UDP hole punching techniques, focusing on low-latency networking and high-performance distributed systems.

Responsibilities:

- Implemented SSH protocol in JavaScript with P2P connectivity.
- Applied UDP hole punching to enable firewall traversal.
- Optimized for low latency and high performance in distributed environments.

Technologies: JavaScript, UDP hole punching, P2P, low-latency networking

Software Developer (Physical Smart Switch and IoT Development Tooling)

Duration: February 2022

Summary: Created a physical smart switch device and associated development tools for ESP32 microcontrollers, including a WiFi manager with a user interface for automatic setup and firmware Over-The-Air updates with backend hosting.

Responsibilities:

- Designed and developed the smart switch hardware and firmware.
- Implemented WiFi manager in C with UI for easy device setup.
- Built OTA update system and backend infrastructure for firmware distribution.

Technologies: C, ESP32, IoT, WiFi manager, firmware OTA updates

Software Developer (Solana Stack Rebuild and Arbitrage Simulation Modules)

Duration: January 2020

Summary:

- Rebuilt the entire Solana blockchain stack from scratch using Node.js and developed modules for heavy mathematical computations and arbitrage simulations to support cryptocurrency trading and blockchain operations

Responsibilities:

- Reimplemented Solana blockchain stack in Node.js.



- Developed computational modules for arbitrage and mathematical simulations.

Technologies: Node.js, Solidity, JavaScript, Cryptocurrencies

Software Developer (Neural Networks Development in SourcePawn, GoLang, and Embedded Systems)

Duration: September 2018

Summary: Pioneered the development of the first neural network in SourcePawn, created neural networks with genetic algorithms in GoLang, and embedded tiny neural networks into Arduino and ATmega328P microcontrollers for advanced AI applications in constrained environments.

Responsibilities:

- Developed neural network implementations in SourcePawn and GoLang.
- Applied genetic algorithms to enhance neural network performance.
- Embedded neural networks into microcontrollers for IoT and embedded AI solutions.

Technologies: SourcePawn, GoLang, Neural Networks, Arduino, ATmega328P

EDUCATION

- **Programming course at codeiq.club**
Recorded own programming course

