# Lucas **Feu Rosa**



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BS in Computer Science

*Systems-minded engineer with 10+ years building compilers, virtual machines, and toolchains in Rust and Go, plus data pipelines and cloud infrastructure. Hands-on technical leader.*

## Professional Experience

### outboundIQ
**Chief Technology Officer** — *Remote*, *January 2024 - Present*

- Hands-on technical leader: writing code, making architecture calls, and shipping alongside the team, not just setting strategy and roadmap
- Designed and built a real-time dial processing pipeline on AWS Kinesis with ClickHouse as the analytical store, sustaining sub-second queries across billions of call records
- Leading the company-wide migration from legacy .NET/Windows and PHP systems to a modern TypeScript stack on AWS, establishing scalable infrastructure for long-term growth
- All CI/CD, infrastructure automation, and deployment workflows across the org run through systems I built and maintain
- Built Go tooling, including a bulk dial exporter and wattdb, a typed, codegen-first DynamoDB modeling library
- Pioneering new product lines, including an MCP server with OAuth that lets customers connect their dial analytics directly to AI platforms like ChatGPT and Claude
- Created a real-time analytics dashboard product on top of ClickHouse, unlocking a new product vertical that doubled company revenue
- Mentoring engineers and running planning sessions, fostering a culture where people level up technically while shipping consistently

TypeScript · Go · AWS · Kinesis · DynamoDB · ClickHouse · Distributed Systems · CI/CD · Architecture · MCP · Leadership

### Midnight Network
**Tooling Architect - Languages Team** — *Remote*, *January 2025 - October 2025*

- Developed a parser, a Hindley-Milner based type system, and WebAssembly code generation for the Starstream language
- Temporarily led IOHK's Glyph team on a Bitcoin bridge project: a compiler from Untyped Plutus Core to RISC-V, with a CEK machine runtime in Zig, so Cardano validators can run on BitVMX
- Set up RISC-V cross-compilation targets for the runtime, ran its test suite under QEMU user-mode emulation, and built the CLI, CI, and release pipeline
- Led development of tooling for the privacy-focused Compact language: a language server, a formatter, editor extensions, and Tree-sitter syntax highlighting
- Built snapshot-based test suites covering correctness and type inference traces
- Collaborated with and provided technical support to developers building on the Midnight blockchain

Rust · Zig · Compilers · RISC-V · QEMU · WebAssembly · Type Systems · Language Server Protocol · Tree-sitter · Zero Knowledge Cryptography

### Cardano Foundation
**Compiler Engineer - Open Source Team** — *Remote*, *October 2022 - January 2025*

- Led development of Aiken, a smart contract language and compiler for the Cardano blockchain
- Led development of the language's tooling: a language server, a formatter, and VS Code extensions
- Ran the project's development life cycle: code reviews, release engineering, documentation, and user support
- Collaborated with and provided technical support to developers across the Cardano community

Rust · Compilers · Language Server Protocol · Tree-sitter · Release Engineering · Tooling · Haskell · Elm

### JPG Store
**Senior Full Stack Engineer** — *Remote*, *January 2022 - October 2022*

- Joined as the fifth engineer, working across the full stack
- Led initial development of a Cardano blockchain indexer in Rust backed by Postgres
- Led initial development of a blockchain API for Cardano
- Modeled and implemented Postgres schema changes
- Led development of the accounts/profile feature and added price history charts and trading history views for NFT collections

Rust · TypeScript · Postgres · Redis · Kubernetes · NextJS · Blockchain Indexer

### Fabletics
Senior Mobile Engineer

*Remote*
*August 2019 - May 2021*

- Rearchitected the core hooks for data fetching and caching, letting developers access backend data without repetitive boilerplate
- Led development of the user account management experience
- Helped build a great user experience to let people easily shop from their phones

React Native | Figma | Microsoft App Center | Bitbucket Pipelines

### Boats Group
Senior Software Engineer

*Miami, FL*
*August 2018 - August 2019*

- Lead engineer on the mobile team responsible for the BoatWizard, BoatTrader, and YachtWorld apps
- Built a Jenkins and fastlane release pipeline, driving a Mac mini build host over SSH, that automated building, signing, and uploading all three apps to both app stores

React Native | hapijs | Jenkins | Fastlane | AWS

### BluBeta
Senior Software Engineer

*Miami, FL*
*October 2017 - August 2018*

- Led the team in developing and architecting applications for various clients

React Native | React | Node.js

### Kipu Systems
Software Engineer

*Miami, FL*
*January 2017 - October 2017*

- Worked on bugs and features across many of the application's core domains

Ruby | Ruby on Rails | Javascript | Postgres | Redis

### Consys
Software Engineer

*Miami, FL*
*August 2013 - December 2016*

- Administered a Linux server and wrote cron jobs for background tasks
- Built HTML forms and tables backed by MySQL databases

Linux | PHP | MySQL | Javascript | jQuery | Digital Ocean

### University of Central Florida CS Dept.
Teaching Assistant

*Miami, FL*
*August 2014 - December 2015*

- Assisted: Intro to Programming with C | Computer Organization and Logic | Computer Science I
- Held office hours twice a week, tutoring students and grading homework and tests

C | Computer Architecture | Data Structures | Algorithms

## Education

### Georgia Institute of Technology
Master of Science in Computer Science

*Remote*
*2026 - 2028*

- Pursuing a Masters degree on nights and weekends with no impact on my professional life

### University of Central Florida
Bachelor of Science in Computer Science

*Orlando, FL USA*
*2011 - 2016*

- Senior Design: Underground object detection using an iPad application connected to a custom ground-penetrating radar (GPR) device
- Topics: Systems Software | Algorithms and Data Structures | Database Systems | Functional Programming | Computer Vision

## Skills

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|---|---|
| **Languages** | English \| Português |
| **Systems** | Rust \| Go \| Zig \| Compilers \| Virtual Machines \| RISC-V \| QEMU \| WebAssembly \| Linux |
| **Infrastructure** | AWS (Kinesis) \| Docker \| Kubernetes \| CI/CD |
| **Data** | PostgreSQL \| MySQL \| ClickHouse \| Redis |
| **Web & APIs** | TypeScript \| Node.js \| React \| Svelte \| REST APIs \| MCP |
| **Personal Interests** | Guitar \| Dogs \| Reading \| Rocket League \| Cycling |

# Projects & Associations

### The Aiken Smart Contract Language

*Remote*

**Open Source Creator & Lead Maintainer**

*April 2022 - October 2025*

- A modern and friendly smart contract language and compiler for the Cardano blockchain
- Started the project as a fork of Gleam, then designed and implemented new language features
- Managed the project's many GitHub repositories and Discord server: reviewing and merging pull requests, triaging issues, and helping users
- Release engineering and documentation

Rust Compilers Functional Programming Type Theory Tooling

### Plutus Virtual Machines in Go, Rust, and Zig

*Remote*

**Creator & Top Contributor**

*April 2023 - Present*

- Implementations of the Plutus virtual machine (Untyped Plutus Core), the runtime that executes Cardano smart contracts
- plutigo (Go, creator): built the CEK machine with CPU and memory execution budgeting, the lexer and parser, and the builtin library including BLS12-381, Blake2b, and Keccak-256; passes the full Plutus conformance test suite
- Reduced plutigo's evaluator memory usage by moving the environment to a linked list and slimming builtin argument storage
- uplc (Rust, top contributor): a bump-allocated evaluator now merged into the Amaru Cardano node; built its flat and CBOR encoding, parsing, and builtins
- plutuz (Zig, creator): parser, pretty printer, and CEK machine evaluator

Go Rust Zig Virtual Machines Interpreters Cryptography Performance

### The Roc Programming Language

*Remote*

**Open Source Contributor**

*October 2020 - May 2022*

- Merged 70 pull requests into the compiler for Roc, a fast, friendly, functional language
- Implemented type constraint generation for the editor's expression AST, plus type error reporting
- Added standard library builtins such as `Num.toStr` and `List.contains`, and string-to-number conversion in the WebAssembly backend
- Improved the REPL and documented Nix-based development

Rust Compilers Type Inference WebAssembly Functional Programming

### alder

*Remote*

**Open Source Creator**

*September 2026 - Present*

- A programming language that compiles to JavaScript with a focus on Cloudflare, forked from the Elm compiler and ported to Rust
- CLI with a dev server supporting server-side rendering, hydration, routing, and hot module reloading

Rust Compilers JavaScript Cloudflare Elm

### room

*Remote*

**Open Source Creator & Maintainer**

*September 2023 - Present*

- A Zellij plugin for quickly searching and switching tabs

Rust WebAssembly Zellij TUI

### Orbistry

*Remote*

**Founder**

*2022 - Present*

- Founded an engineering studio focused on blockchain security, programming languages, and infrastructure; leading smart contract security audits since 2022
- Audited Cardano DeFi including Minswap's stableswap pools, the Lenfi and Levvy lending protocols, and Lava's liquid staking protocol, plus contracts for Blink Labs and EMURGO; some ran through UTxO Company, a studio I founded in 2024, since merged into Orbistry
- Co-created Fortuna, Bitcoin-style proof of work implemented as Cardano smart contracts, and Seine, its block indexer middleware
- Co-developing Nash, a purely functional successor to Aiken with type classes and higher-kinded types that compiles to Untyped Plutus Core
- Built mach, a paid weekly planner where AI agents like Claude and ChatGPT claim and complete todos over MCP

Security Audits Smart Contracts DeFi Compilers Rust TypeScript Aiken MCP Founder

### Butane Protocol

*Remote*

**Advisor and Investor**

*August 2023 - May 2026*

- A synthetics protocol for the Cardano blockchain
- Participated in the seed round of the project
- Provided technical advice and feedback on the project
- Contributed to Blaze, Butane's TypeScript transaction-building library for Cardano

TypeScript Synthetics Cardano Leadership