NOAM FAVIER

SOFTWARE ENGINEERING PORTFOLIO

SYSTEMS PROGRAMMING • AI INTEGRATION • USER EXPERIENCE

Innovative software engineer specializing in high-performance systems, AI integration, and intuitive user interfaces. Proficient in multiple programming paradigms with expertise in C++, Rust, Swift, and TypeScript.

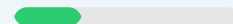## Featured Projects

Game Development

ShadowedHunter

A sophisticated Metroidvania-style game featuring intricate puzzles, advanced combat mechanics, and immersive storytelling. Built with a compelling narrative arc, character progression systems, and dynamic level design. Incorporates physics-based interactions, AI-driven enemy behaviors, and a comprehensive inventory management system.

Tech Stack: C#, Unity, DOTween, A* Pathfinding

Progress: Planning and development phase. Character animations and level layouts in active design.
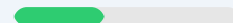
System Utilities

Sysmon-CLI

A lightweight terminal-based system monitoring utility optimized for Mac & Linux power users. Delivers real-time visualization of CPU utilization, memory allocation, disk I/O activity, and network statistics. Leverages efficient low-level system calls to ensure minimal performance impact while providing comprehensive system insights.

Tech Stack: C, POSIX syscalls, IOKit (macOS), procfs (Linux)

Progress: Architecture planning completed. Initial implementation of CPU/memory tracking modules in progress.
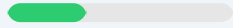
SysDash Ultra 📈

An advanced system monitoring dashboard that provides real-time visualization of CPU, RAM, process trees, GPU utilization, disk activity, and power metrics through an interactive interface. Features predictive performance analytics, hierarchical process visualization, and customizable threshold-based alerting.

Tech Stack: Rust, SwiftUI, sysctl (MacOS), WebGL, D3.js

Progress: Backend core development underway with UI wireframing in progress.
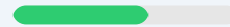
Developer Tools

Smart-Commit </>

An AI-powered Git commit assistant that analyzes code changes to automatically generate contextually relevant commit messages. Ensures commits are descriptive, properly structured, and follow best practices through machine learning models trained on high-quality open-source repositories.

Tech Stack: C++, OpenAI API, libgit2, NLP (Natural Language Processing)

Progress: Research and model training phase completed. Base commit message generation functionality implemented.
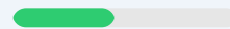
CodeGrep 🔍

A high-performance, syntax-aware code search tool that understands programming language structures including function definitions, variable declarations, and partial queries. Utilizes abstract syntax tree parsing via Tree-sitter to deliver precise search results that respect code semantics rather than mere text matching.

Tech Stack: Rust, Tree-sitter, Regex, Fuzzy Matching Algorithms

Progress: Implementation with advanced file indexing and search optimization in active development.

Iris - AI Coding Assistant 🔋

A fully on-device AI-powered coding assistant for Neovim/VS Code that provides contextual code suggestions, intelligent refactoring recommendations, and inter-active debugging assistance. Leverages locally-running language models to ensure privacy and eliminate cloud API dependencies.

Tech Stack: C++, Rust, Julia, SQLite, Redis, LLMs, Coqui TTS, Speech Recognition

Progress: Neovim integration completed with AI reasoning module in active development.

Productivity Applications

WorkTime 🕐

An intelligent iOS application designed to automatically track productive hours through smart detection of active work sessions. Analyzes app usage patterns, device movement signatures, and Screen Time API data to generate comprehensive productivity analytics and trend visualizations.

Tech Stack: Swift, SwiftUI, CoreData, Screen Time API

Progress: User interface design completed with data tracking integration in progress.
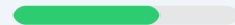
AutoSort 📂

A background file organization daemon that automatically categorizes and sorts files based on configurable rule sets. Supports intelligent sorting based on file type, naming patterns, metadata extraction, and content recognition through OCR processing.

Tech Stack: Go, fsnotify, YAML/JSON configuration, OCR processing (Tesseract)

Progress: Core file detection and rule-based sorting logic implemented with OCR support in development.

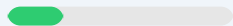## Network & Data Visualization

NetViz Pro

A cutting-edge network traffic analysis tool that renders inbound and outbound connections as an interactive 3D force-directed graph. Provides application-specific traffic monitoring, anomalous connection detection, and sophisticated filtering capabilities with stunning visual representations.

Tech Stack: Rust, SwiftUI, TypeScript, libpcap, BPF, WebGL, GraphQL

Progress: Concept design and planning completed with UI prototype in active development.

Education Technology

BitVoyager 🎓

A browser-based gamified programming education platform where users complete interactive coding challenges in a simulated development environment. Features an XP-based progression system, skill trees, and a comprehensive curriculum covering multiple programming paradigms.

Tech Stack: TypeScript, WebAssembly, Python, Rust, xterm.js

Progress: Interactive shell prototype completed with curriculum content in ongoing development.

Technical Expertise

Languages		Frameworks & Tools	
C/C++	●●●●●	SwiftUI	●●●●●
Rust	●●●●○	Unity	●●●●○
Swift	●●●●●	WebGL	●●●○○
Go	●●●●○	React	●●●●○
TypeScript	●●●●●	Docker/K8s	●●●●○
Python	●●●●○	Git/CI/CD	●●●●●
Julia	●●●○○	Neovim/VS Code	●●●●●

Core Specializations

- System Programming
- Real-time Data Processing
- AI/ML Integration
- UI/UX Design
- Performance Optimization
- Cross-platform Development

Development Paradigms

- Functional Programming
- Object-Oriented Design
- Systems Architecture
- Concurrent Programming
- Data-driven Development
- Test-driven Development

For project demonstrations, code samples, and collaboration inquiries:

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