

Colbyn Wadman

I specialize in building custom tools and utilities — but I've tackled a wide range of problems beyond that

Native iOS/macOS apps

Web dev

Dev tools

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About Me

I fell in love with purely functional programming in my late teens and went deep — pattern matching, sum types, and Hindley-Milner type inference became second nature. While not a professional compiler engineer, I've spent years building parsers, modeling data structures, and transforming ASTs — an experience that shaped my approach to solving abstract, technically difficult problems from first principles.

I've taken a nontraditional path — spending most of my twenties pursuing independent technical work. It taught me how to solve hard problems (though not always how to make money from them). Today, I'm especially strong in systems involving Rust and Swift, particularly in domains that demand deep control, like custom TextKit2 rendering or workflows where off-the-shelf tools — including AI — fall short.

Core Competencies

- **Tooling & Compiler Pipelines**
 - Custom compilers and parsers for domain-specific problems
 - Static site generators with macro-style HTML transformation
 - LLM-integrated pipelines for content scaffolding and structured copy
 - Dataset generation from EPUBs — using a prompt-templating DSL, retry logic, and schema validation

- **Systems Programming & Rendering**
 - Rust and Swift for low-level CLI tools and automation workflows
 - Text rendering engines built on TextKit2, and custom layout systems
 - UI experimentation — including a React-style renderer in Rust
- **Data Engineering & Reverse Engineering**
 - Modeling and transforming structured/unstructured data at scale
 - Reverse engineering obfuscated API payloads (e.g., Google Maps `tbm=map`) for structured extraction

Selected Projects

- **Subscript — Native Note-Taking App:** A Swift-based tool with custom markup-based typesetting and topic-centric navigation. Notes compile into self-hostable HTML archives — blending structured knowledge capture with long-term portability. Designed for clarity and durability, not platform lock-in.
- **WebCompiler — Static Site Compiler:** A Rust toolchain that replaces CMS platforms. Supports macro-style HTML transforms, AI-generated content scaffolding, and modular DOM post-processing. Powers all my client and personal web work.
- **Compiler Generator for Language Datasets:** Generates bilingual dictionary and phrasebook datasets from EPUB sources using prompt-chained LLMs. Features

deterministic preprocessing, error recovery, retry logic, and structured output validation. Output compiles into native SQLite + SwiftUI app bundles.

- **Google Maps Payload Modeling:** Reverse engineered the obfuscated JSON structures behind `tbm=map` search views to build a custom lead-generation pipeline. Includes geographic hierarchy modeling and canonical business entity mapping.

Tooling Philosophy

I prefer tools that I can reason about from the ground up. That's why I often build my own — whether it's a site compiler, a prompt templating system, or a dataset generator. I value clarity, determinism, and structural control over off-the-shelf flexibility. When a problem is weird, brittle, or ill-defined, I work backwards until the tooling makes it tractable.

Technologies I Work With

Languages: Rust, Swift, TypeScript, HTML/CSS

Concepts: AST design, type inference, static analysis, compiler pipelines, data modeling

Ecosystems: iOS (UIKit, AppKit, TextKit2), Web (DOM automation, SEO, AI content scaffolding, design systems)

What I'm Looking For

I'm best suited for roles with real constraints and unconventional problems — where off-the-shelf solutions don't apply. Whether it's parsing data no one wants to touch or building tools that restore control to the developer, I bring a structural mindset, a toolmaker's instinct, and a focus on long-term clarity.

History

2015

[Galileo Processing](#) **Data Center Tech**

Note that I'm not 100% sure when began working here.

SUMMARY TAGS

+ Python

+ Basic Networking

+ Datacenter Misc.

+ Communication

2016

[Uplynk/VDMS](#) **(Verizon Digital Media Services)**

Jr. Developer

Jr. developer in the QA team lead by Asiel Brumfield. I'm not entirely sure when I began working. I left to pursue a startup with my uncle in encrypted images.

SUMMARY TAGS

+ Python

+ Q/A

+ basic Rust

+ basic Video

2018

Secret Startup Experiment

SUMMARY TAGS

+ Video

+ Haskell

+ ffmpeg CLI

2019

[imager.io](#) **Brute Force Image Optimization**

One of the best image optimization tools on the markup.

Imager is a tool for automated image compression, and can competitively optimize very noisy, high resolution images into rather “tiny” files. It's pretty easy too.

It uses ML based metrics in a trial 'n error sorta manner. Everything is free and open source, with absolutely no SAAS lock-ins or vendors.

Milestone

According to GitHub in 2019 I made 1,323 contributions.

To put this in perspective: according to this [data source](#)[†], from December 2016 to December 2017, the 256th person (at the end of the list) made 1,322 total contributions. **So I beat the 256th person by a single contribution.**

Why am I not in these lists? Because they unfortunately filter out accounts without a sufficient number of followers.

SUMMARY TAGS

- + Video Processing
- + Video Codecs
- + Rust
- + C
- + ffmpeg c libs
- + Unsafe Rust (FFI)

^[†] <https://web.archive.org/web/20200415010317/http://gist.github.com/paulmillr/2657075/>

2020

Began College

Notable Comments

You are such a profound writer and thinker.
It has been my privilege to be your instructor of record. One day I will say, I had him in my English class. I have such high hopes for you! Go conquer your world!
You're awesome.
—Dr. Jim Birrell

SUMMARY TAGS

- + LaTeX

UVU CS Grader - Computer Science

In my first semester at UVU I took CS1400 by professor Bianca Ruiz, who then offered me a grading position at the end of the semester. I enjoyed this job and wish I stayed (I took trigonometry and calculus concurrently and was

expecting subsequent semesters to be just as difficult).

The instructor said my code looked “beautiful” before I signed up as a grader.

SUMMARY TAGS

- + Python
- + Grading
- + Teaching
- + Communication

2022

[Subscript](#) A Note Taking App

See my [YouTube Video](#)[†] for details with commentary.

^[†] <https://youtu.be/PEC5PyNhlds?si=W6w6zOrrK29rD37C>

SUMMARY TAGS

- + Swift
- + Native iOS/macOS dev
- + Unsafe Rust (FFI)
- + vector graphics

2024

[3in1Spanish](#) Your go-to Spanish Dictionary, Phrasebook & Flash Cards

A Bilingual Spanish Dictionary, Phrasebook & Flash Card App.

Required a very sophisticated dataset generator that I called the compiler generator. See my [YouTube Video](#)[†] for details with commentary.

^[†] <https://youtu.be/nofJLw51xSk?si=W6w6zOrrK29rD37C>

Bilingual Scriptures

SUMMARY TAGS

- + Prompt Engineering
- + Data Pipelines
- + AI Centric Pipelines
- + Dataset Generation
- + TextKit2[†]

^[†] Custom Markdown Rendering

I like my resumes the way I like my tools — handcrafted.
So I built the tool that builds it.
Why stop at formatting when you can define the pipeline?