Colbyn Wadman

College Student 2020-present

hello@colbyn.com

801-367-4487

History

Current Projects

Subscript ‡

Note Taking App | Work In Progress | 2021-present

Subscript is an app that translates your hand drawn notes (VIA an Apple Pencil) into webpages with navigation, where the drawings themselves map to SVG markup.

It's unpublished, but I've already been using this in my classes, especially in chemistry.

The name 'Subscript' may not be property reserved in the app store and also such may be renamed in the future. If you're interested in evaluating my work, please reach out and I'll be happy to setup a meeting to present my work and technical details therefrom.

Notable Side Projects

Imager †

Automated (Brute Force) Image Compression | Commercial Failure | 2019-2020

Optimizes the compression using ML based metrics (VMAF) in a trial and error manner.

Subscript Markup Language Compiler ✳

This was supposed to replace the ah-hoc toolchain I put together for typesetting my old math notes (but now the Sile Typesetter has math support and is obviously more popular). But this was used in an interesting experiment for syntax highlighting (on an iPad IOS app). Most implementations are based on simple patterns, but in here I was playing with custom syntax highlighting based on parsing the source code into an AST which has much more contextual information and therefore I could -for instance- highlight opening and closing braces based on their indentation level.

PS: I added a screenshot to the associated README file.

SubSystems/chem-bot✺

When I first took chemistry, things were terrible. I started playing with my own computer algebra system that I wanted to use as the backend for a better scientific calculator. For instance, in one of my OS implementations it could perform (some) algebraic simplifications and furthermore it understood units (implemented the AST and traversals myself)!

It could simplify a product of Hz and s into 1, without an ad-hoc rule for the Hz symbol itself. Which was likely the problem, it just seemed more elegant to map Hz to s−1, and then simplify VIA the CAS. Also played with some other ideas, for instance at a higher level, this project could evaluate "mole(energy(photon(wavelength = nm(325))))" into "J * 3.6808174042676e5", using a plugin-system-like-dsl I invented (how each preceding function was individually implemented).

Thereafter, I imagined this as my possible beginning into analog hardware accelerators for the natural sciences VIA the aforementioned CAS that could translate differential equations and other systems into optimized hardware for real value computing.

Notable Jobs

UVU | CS Grader – Computer Science

CS140 | Fall 2020 | Instructor Bianca Ruiz

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 term.

Uplynk/VDMS (Verizon Digital Media Services)

Video Streaming | 2016

Jr. developer in the QA team lead by Asiel Brumfield.

Galileo Processing

Prepaid Credit Card Processor | 2015 ±1 (sometime when I was 17)

Data center tech, worked with Robert Raver.

Notable Teenage Events

Space Monkey

P2P Cloud Storage | Brief Summer Internship | 2013 ±1 (sometime when I was 16/17)

Brief summer internship, back when I was 16 or 17, under my mentor, Tom Metge (when their office was located in Murray).

Professional Interests & Skills

Skills

Programming Topics

Full-Stack | IOS | Video | Parsing | Compilers | Functional Programming | Type Systems

Programming Languages

Rust | Swift | JavaScript | Haskell | PureScript | Elm | Julia | Python

Markup Languages & Other Formats

HTML | CSS | LaTeX | Sile

■ = very skilled and actively maintained ■ = productive and experienced ■ = still productive
■ = formerly productive (not necessarily forgotten) ■ = curious ■ = just productive
□ = unnecessary

Links

[†]	The Imager Landing Page	imager.io	
[‡]	My Chemistry 1010 Notes	content.subscript.app/dev/chemistry-1010---fall-2021/index.html	
[‡]	My Electrical Engineering Notes	content.subscript.app/dev/electrical-engineering/circuit-analysis.html#Overview	
	My Beautiful Math Notes	colbyn.github.io/school-notes-spring-2020/	(This was the forerunner to Subscript.)
[✳]	A WIP LaTeX-like compiler for publishing using web technologies	github.com/subscript-publishing/subscript-compiler	
[✺]	My experiments in a computer algebra system, repo 1 (new)	github.com/colbyn/SubSystems	(If I were to pursue this, Egison is better and more elegant.)
[✺]	My experiments in a computer algebra system, repo 2 (original)	github.com/colbyn/chem-bot	(If I were to pursue this, Egison is better and more elegant.)
	My Personal GitHub Profile	github.com/colbyn	
	The Imager GitHub Organization	github.com/imager-io	(Showcases my experience with low-level video codecs.)
	The online version of this résumé	colbyn.github.io/resume-2022/	
	This is what Bash should look like	github.com/colbyn/commands	