

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It's unpublished, but I've already been using this in my classes, especially in chemistry.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

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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 from the links section.*

SubSystems/chem-bot

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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)!

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/github.com/subscript-publishing/subscript-compiler (This was the forerunner to Subscript.)
[*]	A WIP LaTeX-like compiler for publishing using web technologies	github.com/colbyn/SubSystems
[*]	My experiments in a computer algebra system, repo 1 (new)	github.com/colbyn/chem-bot (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 (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