

# Mendel Rubin

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## Links:

[about.potatkugel.net](http://about.potatkugel.net)

[blog.potatkugel.net](http://blog.potatkugel.net)

[Github:// mendelshop](https://github.com/mendelshop)

## About Me:

I am partially self taught developer. My main interest and focus is in programming languages. You should also check out my website: [about.potatkugel.net](http://about.potatkugel.net), as it gets more frequent updates and it is more extensive.

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## Education

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### BS in Computer Science

University at Albany, May 2025

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## Projects

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### Shank Programming Language(C#) (Group Project/Research/Capstone)

June 2024 – May 2025

- Worked on a LLVM backend to compile Shank.
- Refactored Type and Module Systems.
- Worked on LSP (for Capstone) and Tree Sitter Parser.

### Everything Programming Language(Rust)

February 2022 – Present

- Worked on a LLVM backend to compile Everything.
- Experiment to see what happens when you mix lots of interesting features from different languages.
- Working on a macro/module system based on Racket's.
- Has partial application/currying from ML.
- Planning to have an object system from OOP, and much more.

### Strings Programming Language(Ocaml)

January 2024 – Present

- Has a type system that supports ML style type inference with row types (provides subtyping like experience with parametric polymorphism).
- Uses a constraint based approach for type inference (all the constraints are gathered and then solved together).
- Complex parsing due to using ML syntax with string interpolation. Using custom parser combinator library based on Haskell's megaparsec.

### Git Function History (Rust) – Search Git History for Function changes

June 2022 – Present

- Originally used a bunch of parsers for a couple of languages, but now:
- Uses Tree Sitter parsers to provide better results than using the builtin support in git log.
- Also worked on moving from executing shell commands from Rust to get changes from git, to using the Gitoxide Library.

### Quiztopia(JavaScript) (Group Project)

March 2024 – May 2025

- Worked on a Quizlet like website using the MERN stack.

### Class Projects(Java)

- Awk Interpreter, partial implementation of the common UNIX tool and language.
- OS emulator.
- CPU emulator, emulates a custom 32 bit CPU architecture, also made assembler for it.

### Katan(Rust) – Catan Board Game

June 2025 – Present

- Implemented using the Bevy game engine and ECS system.
- Uses Cubical coordinates to represent positions in the game.
- P2P networking.

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## Interests

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- Programming Languages Design and Implementation: Type Systems, Module Systems, Macro Systems, Static Analysis.
- Functional Programming.
- Systems and Low Level Programming.