Curtis Chin Jen Sem

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Summary

Functional programming enthusiast and avid polyglot. A skilled software developer with a passion for learning and solving real-world problems in innovative ways.

Employment

Software Engineer **Scrive** **08/2025 — Present**

Software Engineer **Channable** **02/2021 — 07/2025**

- Refactored infrastructure responsible for importing terabytes of data from external services per day, improving debuggability and observability.
- Designed and implemented AI-assisted categorization using state-of-the-art techniques for mass text classification, improving the existing model performance by 3x.
- Led the integration of user-defined computations into a high-performance compute pipeline through analysis, and application of programming language theory.
- Improved internal core systems by analyzing expressivity and usability, creating well-researched proposals, improving scalability, performance and developer experience.

Software Engineer **Cargowatch** **02/2018 — 12/2020**

- Implemented a specialized web portal for customer support and designed a DSL for invoicing specification.
- Algorithmically improved the existing automatic invoicing process.

Education

Master of Science in Computer Science **Utrecht University** **2018 — 2020**

- Thesis: Formalized Correctness Proofs of Automatic Differentiation in Coq. Proof was accomplished using logical relations accompanied by simple but effective language representations and denotational semantics.
- Coursework: Advanced Functional Programming, Compiler Construction, Program Semantics and Verification, Concepts of Program Design, Optimization and Vectorization.

Bachelor of Science in Computer Science **Utrecht University** **2015 — 2018**

- Final: Nedtrain (Nederlandse Spoorwegen). Hybrid planning program combining heuristical algorithmic techniques with an intuitive user interface for creating plans for shunting and scheduling problems.
- Coursework: Data Structures, Algorithms, Functional Programming, Discrete Mathematics, Languages and Compilers.

Projects

Helium

- Contributed to the Helium Haskell compiler developed at Utrecht University. Implemented missing Haskell2010 features and improved interoperability between recent experiments and previous work on the compiler.

Programming Languages and Technologies

- **Programming Languages**:
  - *Proficient*: Haskell, Python, Nix, SQL
  - *Familiar*: PHP, Typescript, C#
- **Technologies**: Git, PostgreSQL, Sqlite, Docker
- **Languages**: Dutch, English