Timothy Elgersma

4B, University of Waterloo, Computer Science

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Education

September 2017 – April 2022

University of Waterloo | Bachelor of Computer Science

- Entering 4B of a Bachelor of Computer Science
- **Relevant coursework**: CS 341 (Algorithms), CS 446 (Software Architecture), CS 458 (Security)

Skills

C • C++ • Java • Javascript • Kotlin • LaTeX • Python • SQL • Scala • Typescript

Experience

September 2021 – December 2021

Yugabyte | Software Engineer Intern

C, C++, PostgreSQL

- Enabled row-level geo-partitioning across clouds, regions, and zones by designing and implementing tablespaces for tablegroups (collections of colocated tables)
- Updated YSQL grammar, cluster load balancer, and YSQL dumps to handle new tablespace features

May 2021 – August 2021

Amazon | Software Developer Engineer Intern

Java, Kotlin

- Decreased latency by 15% and operational complexity for two million requests per day by designing and implementing a new API bridge that uses client configurable "profiles"
- Lead design discussions with a variety of stakeholders to ensure the highest standards for scalability, client customization, and enforcing invariants.

September 2020 – December 2020

Huawei | Compiler Engineer Intern

Python, C++

- Dramatically reduced time-to-debug by designing and implementing a script to identify the failing shader and optimization pass of an image generated with the new Bisheng GPU compiler
- Ruled out 80% of potential root causes by combining several debug channels on a simulated device

January 2020 – April 2020

Faire | Backend Developer Intern

Kotlin, PostgreSQL

- Increased Faire's contribution margin by 180bps by implementing payment assistance plans and allowing the risk team to make timely, informed decisions by surfacing relevant customer and Plaid data
- Decreased customer support ticket count by 9% through heuristics to auto-handle common requests
- Refactored customer invoices for correctness, consistency across mediums, clarity, and simplicity

Projects

January 2021 – April 2021

Joos Compiler

Scala

- Compiles Joos 1W, a large subset of Java, directly into assembly for CS 444 (Compiler Construction)
- Designed and implemented scanning, parsing, analysis, and code generation in Scala

June 2020 – September 2020

Crop Companion

Java

- Created an Android app that generates a planting schedule for a balanced diet for a varying population
- Implemented and tested the calculations, and designed and implemented various input screens

January 2019 – Present

Resume Creator

Python, LaTeX

- Implemented a Python script and LaTeX template to generate a resume from YAML