TESLA ICE ZHANG

✉ ice1000kotlin@foxmail.com · ⊙ ice1000 · % ice1000.org · in ice1000

EDUCATION

The Pennsylvania State University, PA, US   08/2018 – Present

Major: Computer Science (Undergraduate), Anticipated Graduation Date: 06/2022, GPA 3.20/4.00

WORK EXPERIENCE

JetBrains Research, Remote   01/2020 – Present

(HoTT and Dependent Types)   Theorem Prover Arend development Intern
- Used features like gradle composite build and buildSrc to reduce build time and improve automation.
- Designed and implemented syntax sugars and IDE features, such as the __ syntax, subexpr visitor, etc.
- Created an extensible REPL framework, provided implementations in CLI (with context-based completion) and in IDE (interacts with the modules loaded in the opened project).

PingCAP Inc., Remote   08/2018 – 08/2019

(Distributed Storage Systems)   TiKV Intern - Ecosystem Team
- Improved many TiKV-relevant libraries, like optimizing the performance of grpcio, adding new features to procinfo.

Sourcebrella Inc., Shenzhen, China   02/2018 – 07/2018

(Static Analysis)   Compiler Front-End, IDE Plugin Dev Intern
- Created a multi-threading cross Java/Kotlin source code indexer which can index Hadoop within 4 minutes.

PERSONAL PROJECTS

Voile   https://github.com/owo-lang/voile-rs

Experimental dependently-typed language with kind-based row-polymorphism
- Supports dependent types, meta variable unification, and non-dependent row-polymorphic record and variant.
- Supports cumulative universe levels and uses a universe lifting operation to get rid of $Set\omega$.
- Implements CLI parser/source code parser and interactive REPL with the help of Rust language's ecosystem.

IntelliJ Pest   https://github.com/pest-parser/intellij-pest

A Pest grammar language plugin for IDEs based on the IntelliJ Platform
- Semantic-based highlighting, completion, navigation, definition extraction/inlining, and Rust plugin integration.
- Provides live preview – test grammar files by dynamically highlighting user code according to the grammar.
- Supports exporting the highlighted user code to HTML format.

SKILLS

- **Program Language**: **multilingual** (not limited to any specific language), especially experienced in Java Kotlin Rust C# Agda Haskell Arend, comfortable with Dart C C++ F# F⋆ Idris Perl (in random order).
- **Compiler**: understand various program representations such as Control Flow Graphs and A-Normal Form.
- **Kotlin/Java**: **4 years** of experience, familiar with JNI, Gradle, and Swing, understand Contract DSL and Kotlin coroutines, did some code analysis with Kotlin's compiler.
- **Type System**: understand Martin-Löf Type Theory, coinduction and Cubical Type Theory, currently studying Homotopy Type Theory, familiar with Idris, Agda (**2 years** of experience, contributor), F⋆, Arend and some Coq.
- **IDE Tooling**: **3 years** of experience, familiar with the IntelliJ Platform infrastructure (created Julia, DTLC, Pest and many other plugins), also have experience with Eclipse/SonarQube plugin development.
- **Development Tool**: can adapt to any editors/OSs, usually use JetBrains IDEs and Emacs under Ubuntu.

MISCELLANEOUS

- Some profile links (please use a PDF reader with web link support): Bintray profile (for publishing JVM libraries), Crates.io profile (for publishing Rust libraries), IntelliJ Plugin developer profile, Research Statement
- Languages: English - fluent (TOEFL 100), Chinese - native speaker
- Opensource Contributions: https://ice1000.org/opensource-contributions contributed to agda, KaTeX, shields.io, raft-rs, grpc-rs, intellij-solidity, intellij-haskell, intellij-rust, rust-analyzer and other projects
- StackOverflow: https://tinyurl.com/y5cmw3dz 4500+ reputations, also active on other StackExchange sites
- Get the latest version of this resume: https://tinyurl.com/y8xdlfug
- Get the complete version of this resume: https://tinyurl.com/y2v59t36
- **1 dan** on CodeWars, ranked #42 on the whole site (Top 0.020%), primarily in Haskell, Agda and Idris
- Love making friends