Tesla Ice Zhang

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🎓 Education

The Pennsylvania State University (PSU), PA, US   08/18 – Current

Major: Computer Science, Anticipated Graduation Date: 06/22

👥 Work Experience

Sourcebrella Inc., Shenzhen, China   02/18 – 07/18

Intern   Compiler Front-End, IDE Plugin Development

- Created IntelliJ/CLion/Eclipse plugin of the Pinpoint analyzer. Helped create SonarQube plugin.
- Created a multi-threading cross Java/Kotlin source code indexer which index Hadoop in 4 minutes.
- Learned a lot about Linux programming and clang/llvm.

PingCAP, Remote   08/18 – Current

Intern   TiKV Team

- Improved many libraries used by TiKV. For example, optimized the memory performance of grpcio, and added new features to procinfo.

🐙 Personal Projects

DevKt   https://github.com/ice1000/dev-kt

Cross-platform lightweight code editor / Kotlin IDE

- Built-in Java/Kotlin highlights and completion, that can support other languages via plugins (transplantable from JetBrains IDE's). Has extra build & run support for Kotlin.
- Flexible architecture, decoupled high-level logic with UI, migration to other UI frameworks is easy.
- Provides fine-grained highlight color and keymap settings, supports hot reload.

minitt-rs   https://github.com/owo-lang/minitt-rs

Experimental dependently-typed programming language implementated in Rust, based on Mini-TT

- Supports Π types (return type depends on input value), Σ types (tuple's second member's type depends on first member's value), sum types and case-split.
- Extendes the type system with subtyping on first-class sum types and keep the support of recursive sum types.
- Implements CLI parser / source code parser and interactive REPL with the help of Rust language's ecosystem.

Julia-IntelliJ   https://github.com/JuliaEditorSupport/julia-intellij

Julia plugin for JetBrains IDEs

- Semantic-based highlighting, quick fixes, completion, parameter hint, special input mode for Unicode characters.
- Use Markdown plugin to highlight doc strings, provides REPL and SciView (showing the output of Plot libraries).

⚙ Skills

- **Programming Languages**: **multilingual developer** (not limited to any specific language), and especially experienced in Java/Kotlin/Rust/C#/Agda/Haskell, comfortable with Dart/C++/F#/F⋆/Idris (listed in random order).
- **Compilers**: familiar with various Parser Generators/Combinators, understand CPS and ANF, studied some theories about dependent types (like Luo's UTT, Martin-Löf Type Theory) and their implementations in programming languages.
- **Kotlin/Java**: **3 years** of experience, **4** projects collected in Awesome Kotlin, familiar with JNI programming, the Gradle build tool, have experience in using the Kotlin compiler to analyze Java code.
- **Formal Verification**: understand dependent types / (co)algebra and Curry-Howard Isomorphism, currently studying Homotopy Type Theory and Cubical Type Theory, familiar with Idris, Agda (**1 years** of experience, developer team member) and F⋆
    Source code studied: Agda, Idris, miniagda, Mini-TT.
- **JetBrains MPS**: **1 years** of experience, understand concepts and usages of **Language-Oriented Programming**.
- **IDE Toolings**: **2 years** of experience, familiar with the IntelliJ Platform infrastructure and overall architecture (created the Julia plugin, Pest plugin and many others), also have experience with Eclipse/SonarQube

- **Mobile Development**: **2 years** of experience, Android (Java, Kotlin (Anko)), Fuchsia (Flutter).
- **Developing Tools**: can adapt to any editors/OSs, usually use JetBrains IDEs and Emacs under Ubuntu, have experience with team tools like YouTrack, Jira, GitHub, BitBucket, Coding.net, Tower.

ℹ MISCELLANEOUS

- Blog: https://ice1000.org/ partially translated into English
- Literate Agda Blog: https://ice1000.org/lagda/ used Literate mode of Agda improved by me
- Bintray: https://bintray.com/ice1000 published some useful JVM libraries
- IntelliJ Plugin developer: https://plugins.jetbrains.com/author/10a216dd-c558-4aaf-aa8a-723f431452fb
- Books about formal verification I've written: https://github.com/ice1000/Books
- Languages: English - fluent (TOEFL 100), Chinese - native speaker
- Opensource contributions: https://ice1000.org/opensource-contributions/
  pull-requested (functional improvements) to organizations like *Microsoft, JetBrains, Ruby, Dropbox, PingCAP, TiKV*, projects like *agda, imgui, shields.io, intellij-solidity, IntelliJ-EmmyLua, intellij-haskell*
- StackOverflow: https://stackoverflow.com/users/7083401/ 3000+ reputations, also active on other StackExchange sites
- Get the newest version of this resume: https://tinyurl.com/y8xdlfug
- **1 kyu** on CodeWars, ranked #32 on the whole site, primarily in Haskell, Agda and Idris
- Love making friends