

# FAN ZHANG

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## Education

B.S. in Software Engineering at **Northeastern University**, NE, China

Sep, 2021 – Jun, 2025

Selected courses: Operating Systems, Computer Networks, Computer Architecture

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## Work Experience

**Tencent**, WXG WeChat Technology Group

Dec, 2024 – Present

Technology Architecture Department, Pre-training/Post-training Engineer of Base Model

- Responsible for the framework development of pre-training/post-training of base model in WeChat, including model training acceleration and memory optimization.
- Participated in the reimplement of DeepSeek Infra, using ThunderKittens to refactor DeepGEMM, and responsible for the development of 80% of Kernels in the framework.

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## Related Projects

Distributed Pre-training Engine for Large Language Models

1145/14 - 1919/8/10

- Supports dependent types, dependent pattern matching with confluence check for overlapping clauses, higher inductive types, GADTs (paper published), hierarchial universes, cubical type theory features, and implicit arguments.
- Can export elaboration result to HTML or  $\text{\LaTeX}$ . Can JIT-compile closures into JVM using HOAS, Can refine patterns using coverage information. Supports both LSP in VSCode and IntelliJ PSI. Provide jlink binary releases.

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## Skills

- **Programming Languages**: multilingual (not limited to any specific language), especially experienced in C/C++ Python Go, comfortable with Java Rust (in random order).
- LLM: familiar with LLM development, especially with the training and inference of large models.
- Kotlin/Java: **10 years of experience**, familiar with JNI, JPMS, Gradle, Kotlin coroutines, and Swing.
- Type Theory: understand Martin-Löf type theory, coinduction, HoTT, and Cubical, familiar with Idris, Agda (**5 years** of experience, contributor), Arend and some Lean/F★/Coq.
- **JetBrains MPS**: understand concepts and applications of Language-Oriented Programming.
- IDE Tooling: **6 years of experience**, familiar with the IntelliJ Platform infrastructure (created Julia, DTLC, Pest, Kala Inspections, etc.), also have experience with VSCode plugin development.
- Mobile Development: **2 years of experience**, familiar with Flutter and Android.
- Tools: editor-agnostic, have experience with team tools like YouTrack, Jira, GitHub, BitBucket, Slack, JetBrains Space and more.

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## Misc

- Crates.io: <https://crates.io/users/ice1000>, publishing interesting Rust libraries
- IntelliJ Marketplace: <https://plugins.jetbrains.com/author/10a216dd-c558-4aaf-aa8a-723f431452fb>
- Languages: English - fluent (TOEFL 100), Chinese - native speaker
- Open-source contributions: <https://ice1000.org/opensource-contributions>, member of JuliaEditorSupport, agda, pest-parser, EmmyLua, arend-lang and more, contributed to **agda**, **Arend**, **libgdx**, **jacoco**, **KaTeX**, **shields.io**, **grpc-rs**, **intellij-solidity**, **intellij-haskell**, **intellij-rust**, **TeXiFy-IDEA**, **rust-analyzer** and other projects (apart from organization ones)
- StackOverflow: 6000+ reputation, also active on Proof Assistants (5000+ reputation) and other StackExchange sites
- Latest revision of this resume: one-page version <https://tinyurl.com/y8xdlfug>, complete version: <https://tinyurl.com/y2v59t36>
- Get the Chinese version of this resume: <https://tinyurl.com/ya4urea8>
- **1 dan** on CodeWars, ranked #111 on the whole site (Top 0.020%), solving and making new coding challenges primarily in Haskell, Agda, and Idris and some other JVM languages