# Atharva Timsina

Tsukuba, Ibaraki, Japan

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## SUMMARY

Software engineer focused on compilers, functional programming, and systems design. Built a statically-typed functional language from first principles in Haskell, contributed to widely-used open-source UI tooling, and developed production backend systems. Strong emphasis on understanding system internals and correctness.

## EDUCATION

**University of Tsukuba** — Tsukuba, Japan
*B.Sc. in Media Sciences and Engineering, School of Informatics* — *Apr 2025 – Expected Mar 2029*
- MEXT (Monbukagakusho) Scholar (Full Government Sponsorship).

**Osaka University** — Osaka, Japan
*Center for Japanese Language and Culture (Intensive Program)* — *Apr 2024 – Mar 2025*
- Coursework: Japanese, foundational STEM subjects in Japanese, Japanese Culture.

## TECHNICAL PROJECTS

**Pura Compiler** | *Haskell, Megaparsec, Type Theory* — Jan 2026
- Designed and implemented a statically-typed functional programming language compiled to JavaScript.
- Engineered a **Hindley-Milner Type Inference** system to ensure mathematical type safety.
- Implemented a recursive descent parser using Megaparsec, with operator precedence handling and error reporting.
- Implemented an effect-tracking system to enforce explicit I/O permissions at compile time.
- Source code: github.com/Axarva/pura-compiler
- Technical report available at: axarva.me/pura.pdf

**XMonad Configuration (Open Source)** | *Haskell, Linux/X11*
- Core contributor to a highly customized tiling window manager configuration with **1,800+ GitHub stars**.
- Wrote configurations for multiple open-source projects to create a user interface loved by the Linux community.
- Source code: github.com/Axarva/dotfiles-2.0

## PROFESSIONAL EXPERIENCE

**E. Ruchi Pvt. Ltd.** — Remote / Kathmandu - Contract-based
*Backend Engineer* — *Oct 2025 – Present*
- Architected the backend for a customer loyalty platform serving ∼300 concurrent users since its launch in December 2025.
- Designed a decoupled REST API using Express.js and MongoDB, separating survey logic from campaign data.
- Implemented rate-limiting strategies compliant with Brevo API quotas to ensure stability.
- Developed abuse-prevention systems for reward distribution and profile verification.

**Incubate Nepal** — Kathmandu, Nepal
*Software Engineering Intern → Peer Mentor* — *Jun 2022 – Dec 2022*
- Selected for a competitive startup incubation program focused on applied software development.
- Collaborated under mentorship of a senior industry engineer (MIT EECS '19, Oracle) on system design and implementation decisions.
- Worked on feature scoping and implementation trade-offs in early-stage products.
- Later served as a peer mentor, supporting newer cohorts with code reviews and technical guidance.

## LANGUAGES

**English (TOEFL iBT score: 111), Nepali (Native), Japanese (Academically Proficient), Hindi (Fluent)**

## AWARDS

**The MEXT (Monbukagakusho) Scholarship**: Government of Japan.

**National Representative for Nepal**: 55th International Chemistry Olympiad (IChO), ETH Zurich.