

# YIHE LI

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## Experience (Portfolio: <https://robertlyhh.github.io/home>)

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**Undergraduate Researcher (UTEA Award) —LinguaQuest** May 2025 – Present  
**University of Toronto** [github.com/Robertlyhh/LinguaQuestGame](https://github.com/Robertlyhh/LinguaQuestGame)

- Leading a 14 people team in design and development of a linguistically informed RPG in **Unity (C#)**, integrating the **URIEL+** typology dataset to visualize global language relationships.
- Built **UI systems**, scene transitions, boss fights, and checkpoint systems and various linguistic mini-games using modular gameplay architecture.
- Collaborated across art/gameplay/data to merge data visualization and linguistic concepts with engaging, real-time player interactions.
- Current Demo: <https://youtu.be/juj0rYi-2r8>

## Personal Game Projects

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**Kingdom Rush (2D & 3D remakes, self-developed)** Robert-2D-Tower-Defense-Game

- Recreated core tower-defense systems to study **graphics pipelines** and **real-time systems** (targeting smooth frame pacing).
- Implemented **spatial partitioning**, **lighting** and **particle VFX**, and interactive **UI**.
- Applied OOP patterns and asset/performance optimizations for responsive gameplay.

**AI Pong Agent (Reinforcement Learning)** <https://github.com/Robertlyhh/Pong-game-AI>

- Trained an RL agent with NEAT to control paddle behavior in real time;

## Software Projects

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**Scrabble Multiplayer Web App** (<https://github.com/WithComment/scrabble>)

- Implemented Java backend for multiplayer logic (state sync, scoring); built responsive React UI.
- Implemented unit tests and integration test to identify and eliminate potential bugs.

**Image Gallery Website** (<https://github.com/Robertuoftcs/roberimage>)

- Designed and deployed full-stack gallery with search and random retrieval APIs on Vercel;
- Tech stack: Next.js, React, TypeScript, Tailwind CSS

## Education

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**University of Toronto** Expected Graduation: December 2026  
B.Sc. in Computer Science(GPA:3.97)  
**Awards:** University of Toronto Excellence Award (UTEA 2025)  
New College Council In-Course Scholarship (2024)

## Clubs & Activities

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**UTGDDC (UofT Game Design & Development Club):** Active member

**Recognized Study Group Leader:** Led study groups for a math and a programming course