

# Alex Doyoon Kim

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## **EDUCATION**

Bachelor of Science: Computer Science, University at Buffalo, Buffalo, New York *December 2025*  
• GPA: 3.63  
INTI International College Penang (American Degree Transfer Program) *March 2018 – May 2020*

## **WORK & RESEARCH EXPERIENCE**

*Undergraduate Researcher (Full-time Summer Internship) — University at Buffalo* *May 2025 – August 2025*

- Contributed to AITIA Project, a behavioral type system that captures causal dependencies in message-passing protocols to ensure properties like deadlock freedom through types
- Verified formal theorems in Rocq by developing machine-checked proofs for key results

*Undergraduate Researcher — Pirouette Project, University at Buffalo* *January 2024 – May 2025*

- Contributed to Pirouette, the first language for typed higher-order functional choreographic programming via endpoint projection into programs for each node in a distributed system
- Developed an AST visualizer tool to use for compiler verification
- Developed the type inference algorithm using unification algorithm for Pirouette's type system in OCaml

*Undergraduate Teaching Assistant — University at Buffalo* *August 2024 – December 2025*

*CSE 250: Intro to Data structures*

- Aided with introducing the design, implementation, and properties of advanced data structures for a class of 350+ students per semester
- Conducted weekly recitations, office hours, and proctored quizzes and exams

*CSE 305: Intro to Programming Languages*

- Aided with introducing the concepts such as strong typing, data abstraction, higher-order functions, polymorphisms, and more found in programming languages for a class of 300+ students per semester
- Conducted weekly recitations, office hours, and proctored quizzes and exams

Songpa Chungdahm English Center, Songpa-gu, Seoul, South Korea *April 2023 – July 2023*

*Assistant Teacher*

- Supported 1,000+ students per week with supplying learning materials and student welfare
- Maintained inventories and printing site supplies for onsite branch

## **SKILLS & TOOLS**

Languages: C, C++, Java, Python, Haskell, OCaml, Go  
Tools: Jupyter, Visual Studio Code, IntelliJ, Emacs, Docker  
Skills: Git Workflow, Agile Methodology (Jira, Trello)

Proof Assistants: Coq, Rocq, Agda  
Frontend: HTML5, CSS, Javascript  
Backend: MongoDB, MySQL, Flask

## **LEADERSHIP & CLUBS**

UB DBPL (August 2024 - Present):

- Member - University at Buffalo Databases and Programming Languages Group

Republic of Korea Army (May 2022 - March 2023):

- Team Leader - Managed 60+ individuals in administrative and training related tasks.

INTI College Penang (July 2018 - August 2019):

- 2018/19 President of AUPEC: American Degree Transfer Program Executive Committee, a student body government; Oversaw 10+ charity and social events for 500+ students