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   Proof Assistants: Coq, Rocq, Agda
Tools: Jupyter, Visual Studio Code, IntelliJ, Emacs, Docker   Frontend: HTML5, CSS, Javascript
Skills: Git Workflow, Agile Methodology (Jira, Trello)   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