Jonathan **Cho**

Master's Student · Aspiring Software Engineer

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Education

University of Washington — *Bothell, WA*

M.S. in Computer Science and Software Engineering — *Spring 2025*

- GPA: 3.8/4.0
- Coursework: Algorithm Design and Analysis, Research Methods in Software Development, Faculty Research Seminar, Advanced 3D Graphics, Multimedia Database Systems,

B.S. in Computer Science and Software Engineering — *Summer 2021*

- GPA: 3.77/4.0
- Dean's List: Autumn 2018 - Winter 2021
- Coursework: Technical Writing, Data Structure and Algorithms 1 & 2, Management Principles for Computing Professionals, Database Systems, Software Engineering, Analysis and Design, Operating Systems, Game Engine Development, Cloud Computing, Intro to Game Development, Usability & User-Centered Design, Intro to Artificial Intelligence, Information Assurance and Cybersecurity, Hardware & Computer Organization

Work Experience

University of Washington - Intelligent Networks Lab — *Bothell, WA*

Graduate Research Assistant - Graphitti | CUDA & C++ — *Autumn 2023*

- Acquired research proficiencies in simulating network-structured nervous systems using high-performance computing and artificial intelligence.
- Refactored cluster processing process for Emergency Services (911) Communication Data with PyQt5 for scalability and maintainability.
- Designed and implemented a git workflow documentation for lab efficiency; impacting procedures for 10+ researchers.

University of Washington — *Bothell, WA*

Undergraduate Teaching Assistant - Computer Science | C++ — *Autumn 2020*

- Course: Data Structures, Algorithms, Discrete Mathematics 1 (DSA).
- Provided personalized feedback and comments to 40+ students, grading 10+ assignments and exams promptly
- Led review sessions with 10+ students, assisting in clarifying DSA concepts & C++.

University of Washington - Cross Reality Collaboration Sandbox — *Bothell, WA*

Undergraduate Research Assistant - VR Research | C# & Unity — *Spring 2020*

- Researched Augmented Space Library (ASL) using Unity and Mixed Reality Toolkit, developing 2 mini-games to aid a graduate student's thesis.
- Conducted usability studies, simulating and stress testing 100+ users on ASL network; identifying key areas of improvement.
- Led scrum meetings with 15+ researchers, discussing project objectives, week-to-week progress, and future opportunities.

Project

Detect it! — *GitHub*

Video Shot Boundary Detection System | Python — *Autumn 2023*

- Utilized Python and OpenCV to implement twin-comparison algorithms for precise transition detection in any video (cuts, gradual transitions).
- Developed user-friendly Python GUI that allowed users to select and playback 20+ detected transitions.
- Documented written report evaluating the trade-offs of different algorithms to best understand automatic partition of full-motion videos.

Scary Maze Game — *GitHub*

Virtual Escape Room | C# & Unity — *Autumn 2023*

- Teamed with another student to develop a working single-player virtual escape room using C# & Unity.
- Implemented 5+ Unity API functions using C# & HLSL to recreate custom Illumination, Texture, Hierarchical Modeling, and Object Movement.
- Delivered presentation to 30+ stakeholders, including project proposal, progress, and technical specifications to deliver project promptly.

ChilPass — *GitHub*

KeePass Replica | C# & .NET — *Spring 2021*

- Built complex offline password manager that allowed 50+ users to insert, update, and delete passwords locally.
- Managed 200+ passwords in encrypted files using SQLite database and .NET encryption techniques (PBKDF2, SHA-256, and AES encryption).
- Facilitated agile scrum workflow with a partner & 3 stakeholders to complete and deliver the password manager within 3-month time frame.

Skills

Languages, Tools, & Technologies

- Python C# C++ Java C SQL HLSL/GLSL HTML/Markdown CSS JavaScript
- Node/Express Unix/Linux MySQL SQLite AWS APIs OpenCV Git Google Test GitHub Actions Scrum/Agile