Chan Um

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EDUCATION

Purdue University   West Lafayette, IN
B.S. in Computer Science concentrating on Machine Intelligence, Minor in Mathematics   Aug 2020 - May 2026 (Expected)
   Relevant Coursework: Data Structures & Algorithms, Systems Programming, Data Mining & Machine Learning
   - **Honors & Development:** Dean's List (Fall 2023 – Present); CodePath Intro to Technical Interview Prep certificate (Summer 2025)

EXPERIENCE

Johns Hopkins University - Ahn Lab   Baltimore, MD
Student Researcher   May 2025 – Present
   - Analyzed and visualized cancer organoid movement images under treatment conditions (IXA, DMSO, Dinaciclib), generating detailed heatmaps, histograms, and polar maps to interpret cell alignment
   - Developed and implemented a cheminformatics machine learning model capable of identifying potential drug candidates based on biomarker input, significantly enhancing precision medicine approaches

Kiahara Lab   West Lafayette, IN
Undergraduate Researcher   Mar 2025 – Present
   - Developed and deployed a web server application for PPF, Phylo-PFP, and ESG using Python (Flask) for backend development and JavaScript (React.js) for frontend interactions
   - Collaborated with graduate students to translate biological research needs into user-friendly software solutions

Purdue University Korean Association   West Lafayette, IN
Webmaster Team Quality Assurance   Jan 2024 – Dec 2024
   - Conducted pre-deployment testing of web features, documented detailed test cases, and streamlined QA processes, significantly reducing production bugs and accelerating developer response times.
   - Improved user experience (UX) by identifying, documenting, and addressing critical usability issues.

Republic of Korea Army   Daejeon, South Korea
Motor Transport Operator   Aug 2021 – Feb 2023
   - Completed 18 months of military service, coordinating logistical operations for a team of 50+ personnel; enhanced leadership, teamwork, and strategic planning skills.

PROJECTS

Lab Experiment Tracker (JavaScript, Python, PostgreSQL)   Aug 2025
   - Developing a full-stack web application to centralize and streamline the tracking and analysis of laboratory experiments, replacing inefficient spreadsheet-based methods
   - Designed and implemented the core relational database schema in PostgreSQL, establishing the data model for experiments, researchers, and results

Optimal Pathfinding System (C++, Dijsktra's & Floyd-Warshall Algorithms)   Apr 2025
   - Developed a pathfinding application in C++ to identify the fastest and most cost-effective route between jump gates and systems, ensuring optimal performance under specified constraints
   - Implemented Dijkstra's algorithm to compute the shortest travel time and integrated the Floyd-Warshall algorithm to determine minimal distance paths between every pair of gates

Social Media Platform, Project Leader (Java)   May 2024
   - Led a team of four in designing, developing, and deploying a responsive social media application under strict feature and timeline constraints
   - Implemented core functionalities including user authentication, profile management, personalized news feed algorithms, and interactive messaging and commenting systems

INVOLVEMENT

   - Social Media Manager - Purdue Korean Association
   - Member - Purdue Astronomy Club, Association for Computing Machinery, Korean-American Scientists and Engineers Association

TECHNICAL SKILLS

Programming Languages: Java, Python, R, MATLAB, C/C++, JavaScript, HTML/CSS, Perl
Frameworks: FastAPI, Flask, TensorFlow, Scikit-learn
Tools and Technologies: SQL, React, Git/Github, IntelliJ, VS Code, RStudio, Blender, Jupyter Notebook