

Alex Minjae Kim

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EDUCATION

Purdue University

Bachelor of Science in Mechanical Engineering

West Lafayette, IN

Aug. 2023 - May 2027

WORK EXPERIENCE / RESEARCH

Veterans' Hospital

Republic of Korea Army Sergeant, Software Engineer

Seoul, Korea

Aug. 2025 - Aug. 2027

- Deployed to the Veterans' Hospital of Korea as a software engineering specialist, managing medical data pipeline for 1000+ of army veterans as part of mandatory military service
- Developed automated data processing pipelines using Python to streamline analysis of dataset results
- Building a RAG-based data retrieval tool with LLMs for sensitive internal vector database pipelines

Tesla

Materials Engineering Intern

Fremont, CA

May 2025 - Aug. 2025

- Designed and modeled water-sealing piezo sensor caps in CATIA, achieving 100% protection of data acquisition systems during cybercab vehicle testing
- Developed an automated Python-based torque data analysis tool that is distributed across multiple Tesla Gigafactories for in-line testing, saving 10+ hours per joint for semi testing
- Pushing-anvil design using CATIA for tensile/pressure testing for joints which replaced the old version of lab anvil

ZF Group

Mechanical Engineering Intern

Lafayette, IN

Jan. 2025 - May 2025

- Automated lab report generation by VBA and Python-based AI module which shortened time by 30%
- Designed protective covers for Electric Power Steering (EPS) connection joints using Creo, distributed to Germany, China
- Analyzed test performance and presented comparisons for 4 dissatisfied steering gear, providing feedback to customer
- Collaborated with 10+ technicians in performance tests of steering columns and gears

PROJECTS / ACTIVITIES

Doosan Robotics

Robotics Engineering Trainee

Gyeonggi-do, Korea

Aug. 2025 - Nov. 2025

- Robot arm sorting project using Doosan M0609, with implementing Computer Vision and ROS2 as part of apprenticeship

Purdue Electric Racing (PER)

Aerodynamics Engineer

West Lafayette, IN

Jan. 2024 - Jan. 2025

- Utilized NX and Solidworks to develop preliminary wing and designed mold components for the undertray
- Simulated wing designs using ANSYS FEA and CFD; analyzed data to optimize rear wing downforce and drag

Campus Mobility Project

Project Lead / Head Designer

West Lafayette, IN

Feb. 2024 - May 2024

- Designed an active roundabout system to improve traffic flow at a high-congestion Purdue intersection
- Programmed a gate control system using C++ that adjusts based on traffic flow using ultrasonic sensor, light sensors
- Presented the prototype gate using Siemens NX to 50 First-Year Engineering students and head professor

Pagani Huayra R

Head Designer

West Lafayette, IN

Feb. 2024

- Modeled wheel spokes and exhaust manifold based off the Pagani Huayra Roadster using Siemens NX
- Designed to be manufactured using Iron 40 and light weight alloys as materials

SKILLS

Software Experience

- 3DEXPERIENCE CATIA, AutoCAD, CATIA V5, CANape, C, C++, Computational Fluid Dynamics (CFD), Creo, Fusion 360, Finite Element Analysis (FEA), MATLAB, MS Office Suite, Python, Siemens NX, Solidworks, Visual Basic for Applications (VBA), Vector CANape, JIRA, Confluence

Languages

- Bilingual in English and Korean, Working proficiency in Mandarin