Alex Minjae Kim

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EDUCATION

Purdue University — **West Lafayette, IN**
Bachelor of Science in Mechanical Engineering — *Aug. 2023 - May 2027*

WORK EXPERIENCE / RESEARCH

Advanced Multiscale Manufacturing Lab — **West Lafayette, IN (Hybrid)**
Undergraduate Researcher — *Dec. 2025 - Present*
- Developing automated data processing pipelines using Python to streamline analysis of manufacturing experimental results
- Building a tool that automatically checks engineering drawings for DFM using OCR and rule-based AI

Central Veterans' Hospital — **Seoul, Korea**
Republic of Korea Army Sergeant, Operational Engineer — *Aug. 2025 - Aug. 2027*
- Deployed to the Central Veterans' Hospital of Korea as an operational engineering specialist, managing medical data pipeline for 500+ of army veterans as part of mandatory military service

Tesla — **Fremont, CA**
Materials Engineering Intern — *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 — **Lafayette, IN**
Mechanical Engineering Intern — *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 — **Gyeonggi-do, Korea**
Robotics Engineering Trainee — *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) — **West Lafayette, IN**
Aerodynamics Engineer — *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 — **West Lafayette, IN**
Project Lead / Head Designer — *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 — **West Lafayette, IN**
Head Designer — *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