

Daniel Hyunchan Suh

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EDUCATION

August 2023 – Present **DUKE UNIVERSITY** Durham, North Carolina
Bachelor of Science – B.S. in Mechanical Engineering

EXPERIENCE

August 2024 – May 2026 **REPUBLIC OF KOREA AIRFORCE, Aircraft Mechanic** Seoul, South Korea

- Executed phase maintenance on a fleet of 10+ KF-16 fighter aircraft, ensuring mission-ready operational capacity.
- Applied precision tools and specialized machinery to conduct component teardowns and replace critical high-stress hardware across turbofan engines, pneumatic subsystems, and tire assemblies under strict technical order (TO) specifications.
- Commissioned with 24-hour ALERT emergency ground crew standby, sustaining strategic defensive readiness within the Korean airspace under high-pressure operational parameters.

September 2023 – May 2024 **DUKE ROBOTICS CLUB, Mechanical Team - Member** Durham, North Carolina

- Engineered a compact actuation mechanism for the robot's payload delivery system using SolidWorks, optimizing cycle time while achieving a 95% success rate.
- Redesigned optical mounts to achieve a 360° dynamic range of motion, expanding spatial tracking coverage.

August 2021 – May 2023 **SFHS VEX ROBOTICS CLUB, Founder and Captain** Seoul, South Korea

- Spearheaded the first robotics program in Seoul Foreign High School history in coordination with institutional leadership to secure administrative approval and funding.
- Led team to back-to-back Korean National Excellence Awards, representing Korea at the VEX World Championships.

PROJECTS

October 2025 – July 2026 **PULSE II, Independent Researcher** Seoul, South Korea

- Reverse-engineered complex STEP directories and STL meshes within SolidWorks to assemble a high-fidelity 6-axis digital twin of the open-source PAROL6 robotic arm.
- Operated 1100+ hours on a BambuLab P1S to successfully manufacture PETG parts that prioritize maximum load and minimum weight via parametric optimization of toolpath trajectories and manufacturing profiles.
- Calibrated precise hardware trigger pins and inductive sensors on rotating joints to establish robust kinematic consistency.

May 2025 – September 2025 **PULSE I, Independent Researcher** Seoul, South Korea

- Integrated an Intel d435i camera on Arduino's Braccio robotic arm to utilize depth data to precisely control the arm's X, Y, and Z axes using intelligent 3D face tracking via NanoOWL object detection libraries.
- Configured a containerized environment using Docker to deploy CUDA, TensorRT, PyTorch, and Torchvision for edge-based object detection.

June 2021 – February 2023 **HACKBERRY PROSTHETIC HAND EXTENSION, Independent Researcher** Seoul, South Korea

- Redesigned the myoelectric HACKberry prosthetic by replacing strain-inducing muscle sensors with an optical computer vision setup, enabling immediate vision-driven motor configurations for specific objects.
- Established low-latency serial communication between the Arduino Uno and Raspberry Pi, synchronizing autonomous motor actuation based on real-time OpenCV pipelines.
- Awarded the Gold Award, Best Category Award, and \$1000 by the Korea Science and Technology Foundation (KSS).

CERTIFICATIONS

March 2026 **CERTIFIED SOLIDWORKS ASSOCIATE (CSWA)** Seoul, South Korea

SKILLS

Technical Skills: SolidWorks, Python, Arduino IDE, Raspberry Pi, 3D printing, Jetson Nano Orin, OpenCV

Interpersonal Skills: Native in English and Korean (dual citizenship), communication, leadership, self-motivated

Interests: Stock-pick Investing, NBA basketball, Film & Media Criticism, Visited 26 countries to date (goal is 50+ by 50 years old)