

SOON YOUNG KWON

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EDUCATION

HARVEY MUDD COLLEGE (HMC) Claremont, CA – Bachelor of Engineering Class of 2029
Major in General Engineering; Specialization in Mechanical Engineering and Material Science and Engineering
Relevant Coursework: Multivariable Calculus, CS, Mechanics, Engineering Projects

SUZHOU SINGAPORE INTERNATIONAL SCHOOL Suzhou, Jiangsu, China - IB Diploma Graduated May 2023
Physics Higher Level, Mathematics Analysis and Approaches HL, Economics HL Final Unweighted GPA: 3.92

PROJECTS & EXPERIENCE

UNIVERSAL ANTENNA REMOUNTING SYSTEM, E4 ENGINEERING PROJECT January 2024 – May 2024

- Designed and prototyped a universal antenna remounting system for satellite/drone GPS tracking, enabling seamless integration with a motorized telescope mount while ensuring $\pm 0.1\text{mm}$ positional accuracy via GD&T-compliant tolerancing
- Developed antenna brackets using SolidWorks, optimizing for lightweight (CFRP 3D printing) and high-strength (CNC-machined aluminum) components
- Managed project timeline and coordination using Gantt charts, daily stand-ups, and meeting minutes for on-time delivery

HYBRID-POWERED GO-KART, MUDD AUTOMOTIVE CLUB September 2023 – Present

- Engineered a hybrid drivetrain integrating a Yamaha SRX 440 IC engine with four 12V electric motors, enabling combined power delivery, regenerative braking, and control between power sources.
- Constructed the chassis using TIG welding (4130 chromoly steel), CNC machining (Al 6061 brackets), and ABS 3D printing (angled joints), reducing total weight by 15% versus a traditional welded-only frame

MUDDSUB September 2023 – May 2024

- Designed a butterfly-shaped rotating marker dropper using SolidWorks, 3D printing, and mechanical tools for our Autonomous Underwater Vehicle (AUV) competing in the international RoboSub competition

MUDD AMATEUR ROCKETRY CLUB September 2023 – May 2024

- Constructed a L-1 certified rocket, concurrently engaging in various rocket designs and simulations through OpenRocket

SEW-EURODRIVE, ENGINEERING MANAGEMENT INTERNSHIP June 2022 – November 2022

- Collected and analyzed defect data from 500+ DRN series parts, collaborating with quality engineers to implement corrective actions that reduced minor defects by 7% and improved first-pass yield by 5%
- Mapped 15+ assembly process steps for DRN motors & gearboxes, identifying discrepancies between technical drawings and actual practices, leading to updated documentation and an 8% reduction in assembly errors.

RESEARCH PROJECTS

CAR WHEEL DIMENSION OPTIMIZATION September 2022 - March 2023

- Mathematically computed the optimal dimension of a car wheel travelling at 120kmh with reflection of real-life conditions
- Utilized advanced hydrodynamics and mechanics concepts, such as Reynolds number analysis, turbulence, rolling force

ACTIVITIES

REPUBLIC OF KOREA ARMY (*Sergeant, Fire Direction Control Specialist*) June 2024 - December 2025

- Led a 10-soldier mortar squad, maintaining operational readiness and discipline during field exercises
- Coordinated fire missions across three squads, applying real-time trigonometry and ballistics analysis to calculate deflection, elevation, distance, and charge values under strict time constraints

CLASS OF 2027 PRESIDENT (*For HMC's class of 2027*) October 2023 – May 2024

- Planned events for the entire class, hosting and organizing outings to create an engaging and supportive community
- Frequently informed the class regarding campus events and first-year news through email and social media, representing the class in various university outlets such as in the student senate, school newspaper, and other events

WOMEN IN STEM (*Co-Leader and Head of Digital Media*) August 2021 – May 2023

- Researched materials and software trends to publish daily technical advocacy content for Women in STEM on social media

VARSITY SWIMMER & SWIM COACH (*NCAA D3 athlete, Founder, and Team Captain*) September 2010 – May 2024

- Founded free swimming lessons for underrepresented athletes willing to improve by hosting weekly practice sessions
- Led an inclusive, supporting, and competitive team with over 90 student athletes while also achieving 48 Gold, 34 Silver, and 37 Bronze medals from swimming throughout competitive career

SKILLS & AWARDS

Technical Skills: Fusion360, SolidWorks, Onshape, MATLAB, ANSYS, Tolerance Analysis (DFM, DFA), CNC Machining, 3D Printing, Welding, Injection Molding, Python, Javascript, HTML, CSS, Unity, Blender

Languages: Fluent in Chinese, Korean, English, Limited Proficiency in Japanese, Spanish

Certifications & Training: Project Management (Google), Full Stack Engineering (Codecademy), Mechanical Engineering (Rice University, Coursera), 3D Modelling (GameDev.tv), CAD Learning Pathway (Onshape), Open Science (NASA)

Awards: Davies Engineering Prize (2024), WES Global Economics Class Valedictorian (2020), HS Honors Award (2021)