

ZHENGKUN (STEVEN) SUN

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Mechanical Engineering student at Imperial College London with experience in design, prototyping, and manufacturing, and great attention to detail. Passionate about applying challenges in machine learning, robotics, mechatronics, aerospace, and sustainable technology. Strong teamwork and leadership through student-led projects.

EDUCATION

MEng Mechanical Engineering, Imperial College London 2024-2028

- Current Courses: Mathematics, Computing, Mechatronics, Materials, Stress Analysis, Mechanics, Dynamics, Fluid Mechanics, Thermodynamics, Heat Transfer, Design and Manufacture, Economics Organisations and Society
- Year 1 **Dean's List (18/210)**

HIGHSCHOOL, Hongwen School Qingdao Campus 2020-2024

- A-Level: A*A*A*A*A* in Maths, Further Maths, Physics, Chemistry, Computer Science | Aurora Cup Debate Challenge, Founder | Prefect (Student Leader) | House Captain | British Physics Olympiad BPhO R1 Global Gold | Senior Mathematics Challenge SMC Global Gold | NHS DLC Debate Octofinal

PROFESSIONAL EXPERIENCE

Talks Officer, Imperial College Robotics Society Oct2025 - Present

- Lead designed 3 national autonomous robotics competitions and won all 3. Order of magnitude higher points than second place in all three competitions.
- Worked on all parts of the robot. mainly on machine vision system and algorithm, embedded code, python, and mechanical design. Also custom designed PCB for the system

Payload Engineer, Imperial College London Rocketry, Imperial College Sep 2024 - Oct 2025

- Designed a 3U Cubesat within the main rocket (PLUTO)
- Collaboration with Natural History Museum Research Team to research the effects of rocket vibration on cyanobacteria. Features a spectrometer that communicates with the flight controller module via I2C.

Course Lead, Arduino Course, Hongwen School Spring 2024

- Initiated and taught a 1-term Arduino and Circuit Testing course in my high school, covering Control, Temp/Humidity Sensing, Motor Driving, Ultrasonic and RFID.

Founder, SayBooks, Hongwen School Sep 2022 - June 2024

- Founded the first and only second-hand book sales platform to reduce the waste of textbooks. Managed a database of books and developed a miniprogram to coordinate books.
- Worked alongside senior school management and extended to a Club that continued hosting events regularly.

PROJECTS

Design for Portable Continuous Positive Airway Pressure(CPAP) Device Feb 2026

- In a week, fully designed and presented an ergonomic and portable CPAP medical grade device that can alleviate sleep apnea.
- I worked in most of the calculations and mechanical design

Snowfield Rescue Supply Robot, Makathon 2026, City and Guilds Union Feb 2026

- Designed a fully working prototype of a supply robot for use in snowfield in 48H. Revolutionized robotic motion in powder snow with Archimedes' screw drive.
- Ranked 2nd** out of 24 teams and advanced to next round.

Portable Continuous Positive Airway Pressure CPAP Machine Design, Design Week Feb 2026

- In collaboration with medical students at Brunel University, designed a portable CPAP machine.

Drive Transmission for F24 Car Autumn 2025

- Worked in a team and led the design and manufacture of a constant gear ratio gearbox, including a turned shaft and gear, milled plate, 3D printed components, and CNC aluminium block.
- Analysed stress distribution, lifetime and calculated every component to meet international requirements and design standards, tested at the University.

Inclusive Additive Design Challenge Autumn 2025

- Designed a modular clip-on umbrella stand for a wheelchair.

- Fast prototyped 6 iterations using 3D printing and won **People's Choice Award** in the local finals.

Microprocessor Digital Clock

Summer 2024

- Designed a Digital Clock supporting an ARM Cortex RA2E1 MCU. Supporting time display and adjustment, Temperature, Humidity, Battery Management, 3D printed case, and Custom front Panel.
- Open sourced on OSHWHUB and participated in the 8th JLC Electric Race.

PUBLICATION

Mar 2023

- Application of Edge Intelligence and Vehicle-To-Vehicle Communication in Next-Generation Autonomous Driving

TECHNICAL SKILLS AND HOBBIES

- SolidWorks, Fusion 360, FEA, Python, Java, C++, ANSYS Granta, Abaqus, EDA, SWI-Prolog, Microsoft 365, LaTeX, 3D Printing, PCB Design, Machine Vision (YOLO, U-Net), Arduino, ESP32, Single Board Computers (RPI, Jetson), Machining Methods (Milling, Turning, Drilling, CNC, Cutting...)
- Snowboarding, Hiking, Photography, Scuba Diving, Climbing