STEFAN SAAR

European citizen with a UK student visa

stefan.saar@gmail.com

linkedin.com/in/stefansaar/
stefansaar.com

PERSONAL PROFILE

I'm a final-year Design Engineering student who is extremely passionate about robotics and autonomy problems that don't have solutions yet. I am driven by perpetual progress and deliberately seek the hardest challenges where it's necessary to apply multi-disciplinary skills from first-principles to solve problems (from top-2 global university to Starship autonomous robots, NASA JPL rover projects and Apple NPI Product Operations) because that's where frontier work happens.

WORK EXPERIENCE

NPI Product Quality Engineering Intern | Apple

Mar 2025 - Oct 2025

- Led quality implementation for a new pilot site, collaborating with cross-functional teams and vendors to conduct failure analysis, drive process improvements, and achieve full line validation in an accelerated 3-week timeline.
- Drove a New Product Introduction (NPI) by creating the Product Quality Plan, managing CapEx, and sourcing equipment to ensure a successful launch and monitor performance.
- Developed and deployed a web-based data analysis app with LLM integration. The tool was able to predict 6% of total product failures from field data, projecting over $22k in annual cost savings per product per site. Presented the project 1:1 to Apple's Product Operations Senior VP Priya.

Project Manager | Estonian Engineering Association

Oct 2024 - Nov 2024

- Led engineering outreach events, managing budgets and driving program improvements.
- Presented project plans and results to cross-functional teams and executive leadership.

Mechanical Engineering Intern | Starship Technologies

Jul 2024 - Sept 2024

- Designed and built test rigs to measure deformation and forces on robot parts using DoE.
- Determined kinetic and dynamic parameters like stiffness, damping, and moments of inertia through data gathered with instrumentation through experiments.
- Developed and refined realistic robot simulations in MATLAB Simscape based on experimental data and real-world testing for validating new design concepts for new robot versions.
- Created detailed reports and presented to engineering executives and teams of over 100 people.

Engineering Intern | Krakul

Jul 2023 - Sept 2023

- Participated in client design discussions and devised CAD concepts for a food-monitoring device.
- Developed a BME688 sensor driver in C++ for the device's environmental data collection functionality.
- Performed microsoldering, quality testing and troubleshooting on a train communication signal unit.
- Created updated PCB manufacturing files for an electric fence device, refining copper trace flaws.

Platoon Leader | Estonian Defence Forces

Jul 2021 - Jun 2022

- Led a 35-member team, developing leadership skills and optimising resources and morale.
- Awarded 'Best Soldier' in NCO course for exceptional leadership and decision-making under pressure.

EDUCATION

MEng Design Engineering | Imperial College London
Sept 2022 - Jun 2026

Master in Engineering | University World Ranking (QS 2026): **2nd**

Relevant Modules: Robotics Research Project, Applied Robotics, Solid Mechanics, Machine Learning for Design Engineers, Electronics, Sensing & IoT, Data to Product, Design for Visual Systems, Economics and Finance for Systems Design, Optimisation, Physical Computing, Human-Centred Design Engineering.

Honours:

Dean's List (Top 10 of the cohort in Year 3)**, First Class Honours** (Year 1, 2 and 3, on-track for Year 4)

- Master's Project: Integrating and developing novel sensors to enhance exteroception and proprioception for SLIDER, a novel lightweight kneeless bipedal walking research robot.
- Built products combining mechanical design, electronics, and software, solving integration challenges like sensor calibration, power management, and ensuring reliable communication between systems.
- Conducted user research and field testing to identify real-world failure modes and iteratively improve product robustness and reliability.

Engineering | Tallinn Secondary School of Science
Sept 2018 - Jun 2021

- Graduated with a **Gold Medal** (cum laude), receiving distinctions in Mathematics, Physics & especially in Engineering for my shed design RINKPINK & innovative 'reverse-pocket' concepts.
- Wrote a research paper on "The student companies of Tallinn Secondary School of Science and their creators' involvement in entrepreneurship in later life".

PROJECTS

Mars Rover Wheel Redesign Mar 2026

- Developed a 66% scale Curiosity rover wheel design with strain gauge sensors for terrain classification, consulting with NASA JPL engineers to validate the design, achieving 86% accuracy in identifying terrain types (gravel, rocks, sand) and slippage through vibrational response analysis.

Gemini AI Hackathon - 3rd Place (won $20,000 credits prize) Dec 2025

- Built an LLM-powered platform enabling young adults to create DIY mechatronics projects through chat interface, integrating Gemini API for component selection, instructions, and code generation.

Nest Assured (items tracking device) May 2024

- Developed a manufacturing-ready UHF RFID tracking system for essential items based on user research with ADHD individuals, creating a working prototype validated through iterative user testing.

Self-Balancing Robot Mar 2024

- Built a self-balancing robot using IMU sensor feedback, developing and tuning a PID control system to maintain dynamic stability.

Aero 2S (SUV Design) Feb 2024

- Created a novel bullet-like SUV exterior design in CAD combining aerodynamic efficiency and sporty aesthetics of the car, achieving a drag coefficient of 0.215 through flow simulations in Solidworks.

PROFICIENCIES / TECHNICAL SKILLS

Programming: MATLAB, C/C++ (high-level), Python (numpy, scikit, opencv, pytorch; OOP), JS, R

Software: Solidworks, Onshape, Fusion360 (CAD & Simulation); Ansys (FEA); MATLAB (Simulink simulations, image processing), Figma; Excel; PowerPoint; Claude Code, Antigravity (agentic workflows)

Languages: Estonian - native; English - professionally fluent