Isak Jarrin

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EXPERIENCE

Powder Bed Fusion (PBF-LB) Research — B.S. Thesis Student, GKN Aerospace Sweden — Trollhättan, SE | Aug 2026 – Present

- Conducting B.S. thesis research on Laser Powder Bed Fusion (PBF-LB) metal additive manufacturing in collaboration with University West.

Hardware Integration Engineer, SCAILAB — Västerås, SE | Jan 2026 – Present

Hardware Integration Engineer (Jun 2026 – Present) · Mechanical Engineering Intern (Jan 2026 – Jun 2026)

- Assembled, wired, and calibrated physical robotics platforms combining custom mechanical parts with microcontrollers, sensors, and actuators.
- Built and calibrated a 6-axis robotic manipulator, integrating low-level motor and gripper control.
- Built a mobile flight-case test rig with centralized power distribution, an overhead camera frame, Teensy 4.1 and Arduino Nano controllers, and two Raspberry Pi nodes running ROS 2.

Mechanical Design Engineer, Freelance — Gothenburg, SE | Sep 2024 – Jan 2026

- Delivered 3D CAD models and 2D technical drawings in Autodesk Inventor for small businesses, engineers, and fabricators.
- Converted physical prototypes and product concepts into manufacturing drawing packages applying GD&T (ISO 1101 / ISO 2768), tolerance stack-up analysis, and DFM.

PROJECTS

Commercial Drywall Cutting Tool — Autodesk Inventor, GD&T (ISO 1101 / 2768), Tolerance Stack-Up, DFM

- Modeled a handheld commercial drywall cutter in Autodesk Inventor, refining ergonomics and running tolerance stack-up analyses across mating parts.
- Produced a tooling- and production-ready ISO 2D manufacturing drawing package.

Sensor-Controlled Dispenser Retrofit — RP2040 (Pico W), MicroPython, BME680, DRV8833, MQTT

- Retrofitted a commercial mechanical dispenser with a Raspberry Pi Pico W, BME680 environmental sensor, and DRV8833 H-bridge DC motor driver.
- Wrote MicroPython firmware to read ambient VOC and humidity levels and trigger actuation over Wi-Fi via MQTT (Mosquitto).

Centrifugal Solder Fume Extractor — Autodesk Inventor, FDM 3D Printing, PWM DC Control

- Designed a radial impeller and centrifugal snail-shell volute housing in Autodesk Inventor to maintain static pressure across True-HEPA H13 and activated carbon filters.
- Fabricated the housing via high-density FDM 3D printing and integrated a PWM DC motor speed governor.

EDUCATION

B.S. in Mechanical Engineering, University West (Högskolan Väst) — Jan 2024 – Jan 2027

Thesis: Metal Additive Manufacturing Research — Laser Powder Bed Fusion (PBF-LB) (GKN Aerospace Sweden) | Coursework: CAD (Autodesk Inventor), Machine Elements, Strength of Materials, Manufacturing Processes, Robotics & Automation, Feedback/Logic Control, PLC Programming / Ladder Logic, Sensors

B.S. in International Business Management, Mälardalen University (Mälardalens universitet / MDU) — Aug 2020 – Jun 2023

Coursework: Project & Strategic Leadership, Analytics & Operations, Global Trade & Law

International Baccalaureate (IB) Bilingual Diploma, Secondary Education — Aug 2018 – Jun 2020

Awarded Bilingual Diploma designation, Concentration in International/Global Studies

SKILLS & LANGUAGES

CAD & Mechanical Design: Autodesk Inventor (3D CAD, Assemblies, 2D Drafting), GD&T (ISO 1101, ISO 2768), Tolerance Stack-Up Analysis, DFM

Manufacturing & Materials: Laser Powder Bed Fusion (PBF-LB), FDM 3D Printing, Metallurgy, Fracture Mechanics, Thermodynamics & Heat Transfer

Embedded & Electronics: Teensy 4.1, RP2040 (Pico W), Arduino (Nano, Portenta), BME680, DRV8833, PWM Motor Control, PLC / Ladder Logic, Power Distribution & Harness Wiring

Robotics & Software: ROS 2, Linux (Raspberry Pi), Python, MicroPython, C/C++, MQTT, TypeScript / Next.js, Git

Certification: ACE-220: Enterprise Prototyping (Arduino, ID 131899597, 2025-02–2030-02)

Languages: English (Native or bilingual proficiency), Spanish (Native or bilingual proficiency), Swedish (Limited working proficiency)