JAKUB JANDUS

Embedded SW Engineer | Curious Team Player

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my portfolio

MOTIVATION

As a dedicated robotics engineer, I thrive at the intersection of complex software and hands-on hardware. I am looking for a professional role alongside my studies where I can contribute my full technical toolkit to actual product development. From developing a Raspberry Pi-based rocket flight computer, over integrating PLC/vision in an on-site project course at NNE, to coding a C++ motor control library for embedded Linux, I have built a reputation for disciplined execution and attention to detail. I do not just write code; I build tools that create real-world value. My experience as a lead Teaching Assistant and DanSTAR board member has taught me that the best technical solutions are born from clear communication and a deep understanding of the end product. I would be excited by the prospect of bringing this user-first, high-quality craftsmanship to your team.

EDUCATION

Danmarks Tekniske Universitet (DTU) *Sep 2025 – present*
Kongens Lyngby, Denmark *Expected graduation: Jun 2027*

- Master of Science in Autonomous Systems Engineering
- Relevant courses: Python and High-Performance Computing, Distributed Real-time Systems

Worcester Polytechnic Institute (WPI) *Aug 2021 – May 2025*
Worcester, MA, United States

- Bachelor of Science in Robotics Engineering with High Distinction
- Minor in Computer Science, CGPA: 4.0/4.0
- Relevant courses: Software Engineering, Artificial Intelligence for Robotics, Industrial Robotics

WORK EXPERIENCE

Teaching Assistant *Apr 2022 – May 2025*
WPI Washburn Machine Shops | Worcester, MA, United States

- Trained hundreds of students in safe CNC machining operation and CAM (class instruction + open help hours)
- Advanced to section lead, mentoring fellow TAs and improving consistency in training and project support

Autonomy Engineer Intern *May 2024 – Aug 2024*
Smartapp.com | Worcester, MA, United States

- Developed a C++ 1kHz closed-loop motor control library for Linux, integrated via Python wrapper to codebase
- Researched and integrated sensors for a fully self-contained thrust test stand, including UI development

Robotics Application Engineer Intern *May 2023 – Aug 2023*
Stäubli | Pardubice, Czech Republic

- Converted a robot arm into a large 3D printer by coding a real-time G-code interpreter in the robot controller
- Engineered an exhibition robot cell with laser-scanner safety and an automated tool-changer for live demos
- Supported robot cells at *Technology Days*, including system setup, recalibration, and client-facing presentations

SKILLS

Languages: Czech (native; C2), English (fluent; C2), Danish (beginner, A1)

Programming: C/C++; Python (NumPy, Pandas, SciPy, PyTorch); MATLAB; ROS 1/2; TypeScript

Embedded: Raspberry Pi, NXP, ESP32, FPGA, TCP/IP computer networking, MQTT, (I2C, SPI, CAN, ADC/DAC)

Software: Git (GitHub Actions CI/CD), embedded Linux, Microsoft Office Suite, LaTeX, SolidWorks, Fusion360

Manufacturing: CNC Mill/Lathe, Industrial Robotics (UR, Stäubli), Siemens PLC, 3D Printing, Laser Cutting

Soft skills:

Critical thinking – solved a knowledge gap problem by developing and teaching a workshop amid staff shortages.

Creative problem solving – designed an AI-assisted script to solve transcribing mixed Mandarin-English interviews.

PROJECTS

Terrawarden Drone Cleanup Thesis Project *Aug 2024 – May 2025*
WPI | Worcester, MA, United States

- Led a team of six to develop a quadrotor drone for autonomous garbage detection and collection
- Designed the airframe in CAD and prototyped a lightweight 3-DOF manipulator for object handling
- Collaborated with teammates on integrating a YOLO detector stereo-vision pipeline into ROS2
- Conducted flight tests as pilot and safety officer, ensuring safe and reliable operation

Dynamic Materials Research Project (ShiveWorks) *Mar 2023 – May 2023*
WPI | Worcester, MA, United States

- Led engineering efforts in a wave-propagation research project
- Developed an embedded system architecture to control 100 segments
- Utilized Python and MQTT for wireless data distribution achieving real-time synchronization

SPARE TIME

Most of my free time I spend building and prototyping maker projects, often inspired by my love of aviation and space. The precision and elegance of flight fuel both my curiosity and my approach to design. I enjoy tinkering with electrical and computer systems, from building my own FPV drone to making a small egg painting robot, and staying up to date with the latest trends in technology and industry. Photography is another creative outlet I turn to, offering a different lens on design and detail. And when I am not in the workshop, you will find me outdoors – hiking, running, or skiing – activities that balance the hours at the workbench and keep me grounded, resilient, and full of energy for the next project.

AWARDS

The Kellner Family Foundation Scholarship *Aug 2021 – May 2025*
Financial support of the most talented Czech students pursuing bachelor's studies abroad

WPI Presidential Scholarship *Aug 2021 – May 2025*
Merit-based award for exceptional academic achievement and leadership

2025 WPI Salisbury Prize *Apr 2025*
Awarded for academic excellence in Robotics Engineering

2024 WPI President's Interactive Qualifying Project (IQP) Awards Finalist *Jan 2025*
Award for student teams whose IQPs excel in connecting science, technology, and societal needs

CLUB ACTIVITIES

DanSTAR Rocketry Association *Oct 2025 – present*
Lyngby, Denmark

- Board Member shaping the association's vision and direction
- Embedded Systems Engineer developing software and electronics to control the rocket

WPI High Power Rocketry Club *Sep 2021 – May 2024*
Worcester, MA, United States

- Served as manufacturing specialist and sub-team member for avionics and airbrakes
- Contributed to team design and manufacturing of a rocket for the 10,000 ft apogee IREC competition
- Researched and designed the CAN communication PCB for rocket avionics

REFERENCES

Available upon request