Jacob **Warrer**

BEng Robot systems

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Embedded systems and robotics engineer with experience in full-stack development and system integration. Passionate about building robust, scalable solutions across hardware and software boundaries.

Education

Southern University of Denmark — *Odense, DK*

Bachelor of engineering — *Aug 2019 - Jan 2023*

Major: Robotics Engineering
Final project: LIDAR based auto focus system for drone payloads for inspecting infrastructure, grade: 12 (A)

Iowa State University — *Ames, IA*

Study abroad — *Aug 2021 - Dec 2021*

- Facilitated a team of students in the development of an embedded system prototype achieving autonomous navigation and obstacle avoidance.
- Improved cross-cultural communication and technical collaboration through coursework and team projects.
- Accepted on the Deans List Fall semester 2021.

Core Competencies

Domains Embedded Systems, Robotics, Computer Vision, Kinematics, Controls
Strengths Real-time constraints, Reliability, Safety mindset, Cross-functional collaboration

Technical Skills

Languages C/C++, Python, C#/.NET
Perception Image processing, camera calibration, feature extraction, pose estimation
Comms SPI, I2C, UART, TCP/IP
Tooling CMake, Git, Unit testing, Docker, CI/CD
Hardware Oscilloscope, logic analyzer, sensors, motor drivers, power management

Experience

Phase One — *Copenhagen, DK*

Software Engineer — *Jan. 2023 - present*

- Developed cross-platform GUI (Qt/MVC) for semi-automated geometric calibration across international labs.
- Used computer vision and inverse kinematics to estimate target pose and autonomously aim a gimbal-mounted camera.
- Coordinated cross-departmental tasks in order to achieve the project goals and deadlines.
- Established proper documentation for production handover of geometric calibration procedures.
- Contributed in development of a real-time .NET application for manned aerial surveying applications

Phase One — *Copenhagen, DK*

Engineering intern/student worker — *Feb. 2022 - Dec 2022*

- Successfully conducted and presented cross faculty pre-investigation for new product opportunity.
- Utilized existing knowledge to develop software suite for test of multiple hardware interfaces, during production QA

FDF — *Kirke Værløse, DK*

FDF Scout Leader — *2010–2018*

- Solved complex technical challenges with minimal resources in dynamic outdoor settings.
- Led diverse teams to collaboratively troubleshoot and deliver robust solutions.
- Integrated technical components into cohesive systems using structured methods.

Projects

Pick and throw Robot cell, SDU

Robot Integration developer

- Built integrated robotic system for localization, object handling, and motion execution using kinematics, CV, and C++ multi-threading.

IoT Flower Pot

Private project

- Designed and implemented an IoT system using ESP8266 microcontrollers to monitor and water household plants autonomously.
- Developed backend with MySQL and PHP for sensor data collection, and an HTML frontend for live visualization.
- Integrated multiple analog/digital sensors and actuators with Wi-Fi connectivity and scheduled control logic.