

# Márton Lőrinczi

## Senior Software Developer

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## SUMMARY

Enthusiastic and versatile Senior Software Developer with a passion for both low-level embedded systems and high-level software architecture. Known as a creative problem-solver and strong team player who thrives in startup environments where I can contribute to the entire product life cycle—from system design and architecture to hands-on implementation and deployment. I enjoy designing hardware, working with embedded systems, and controlling complex mechatronic systems. My interests also extend to DevOps, CI/CD, and modern backend architectures.

In my free time, I enjoy creative work such as woodworking, welding, and soldering—activities that complement my passion for building both physical and digital solutions. I excel in environments where versatility, ownership, and end-to-end product thinking are valued.

## PROFESSIONAL EXPERIENCE

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**[DMG MORI HEITEC Digital Kft.](#)** – Senior Software Developer

**2023 - 2025**

- Developed and maintained microservice-based server systems facilitating standardized communication between CNC machines and higher-level software layers.
- Implemented the FLAMES protocol over OPC-UA, integrating CNC machines into fully automated SOFLEX-controlled factories.
- Created a user-friendly diagnostic tool for monitoring and debugging the NATS message broker, extensively utilized by developers, testers, and service personnel.
- Traveled abroad to deploy and support software implementations with clients.

### Technologies used:

Linux, Docker, C++, C17, Go, Python, PyQt, NATS, OPC-UA, FLAMES,

## **Norbit Hungary Kft - Aptomar.** - Senior Software Developer

**2022 - 2023**

- Built a data pipeline that transformed AIS maritime data into structured Python objects, enabling efficient data exchange via RabbitMQ.
- Integrated diverse sources of maritime weather forecast data (AWS, APIs) into a standardized format, streamlining data accessibility for end users.
- Developed and deployed a comprehensive customer web portal featuring secure single sign-on (SSO) via Azure and AWS Cognito, advanced file storage functionalities resembling Google Drive (including file preview, image viewing, video playback, detailed permission management, and file/folder operations), and live camera stream management.
- Set up and maintained a sophisticated CI/CD pipeline using GitLab CI and custom Ansible deployment scripts, improving team productivity and software reliability.
- Created and deployed a Slack bot running on AWS EC2 to assist employees in generating timesheets and billing reports for their abroad travels, integrated seamlessly with the company's Slack workspace.

### **Technologies used:**

Linux, Docker, Python, Go (Gin framework), AWS, Azure, Nginx, REST API, OpenAPI3, PostgreSQL, SSO, Ansible, Gitlab CI, Slack-Bot

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## **FOR GmbH (Vienna)** - Architect and Developer

**2021 - 2022**

- Architected and implemented complex hardware and software systems for an automated cannabis trimming machine, integrating STM32 microcontrollers with sensor arrays and stepper and servo motors.
- Developed an interactive Python-based GUI application, enabling real-time machine control, sensor data visualization, image capturing via high-speed cameras, and playback capabilities.
- Planned and initiated early stages of a Machine Learning model to automate precision trimming based on sensor and image data.

### **Technologies used:**

C, C++, Python, STM32, ESP32, SPI, I2C, FreeRTOS, PyQt6, QML, Pandas, SciPy, OpenCV, Database integration.

- **EV Car Charger:** Developed comprehensive software solutions including a Qt5/C++ GUI for commercial displays, controlling a battery charger module via MODBUS protocol, and implementing a sensor module controlled by an STM32.
- **Tensile Testing Machine Smartening:** Designed and implemented a Python/PyQt5 application for data processing and visualization of material testing sensor data, including curve plotting and Excel export.
- **Card Dispenser System:** Built a C++/Qt5-based control software with integrated web server and custom encryption, enabling visitor card distribution.
- **Twelve Cylinder Train Engine Diagnostics:** Upgraded an existing Delphi-based giant train engine diagnostics software from 6-cylinder to 12-cylinder capability.
- **Smart Earrings for Pigs:** Designed ultra-low-power Bluetooth-enabled wearable sensors for livestock monitoring, achieving a remarkable 2-year battery life through optimized power management.
- **Train Diagnostic Data Processing:** Enhanced a C#-based system with a Python GUI tool to process large binary datasets from trains, generating Excel reports significantly faster and more user-friendly.
- **OONLY Vending Machine:** Engineered a complex control system for precise management of stepper and servo motors using STM32 microcontrollers and FreeRTOS. Developed the custom software framework [Urabros](#) for modular and efficient hardware control and Python-based diagnostic software providing real-time system monitoring.  
I made a small fun video ( with Adobe Premiere ) about the project it can be found: [here](#)
- **[Ait Desk - Smart Table:](#)** Designed the complete electric system and software for a luxury office desk featuring adjustable height via servo motors, integrated air quality sensors, Bluetooth audio reception, wireless charging, and capacitive touch controls. Developed both STM32-based and later ESP32-based versions, incorporating FreeRTOS and multithreaded architecture.
- **[Clift Climbing Wall:](#)** Designed and implemented a comprehensive digital climbing wall system with STM32-based RGB LED pixel controls, capacitive touch sensing, and a Raspberry Pi/QML-based controller for interactive climbing experiences.
- **[Gemini 9 Axis Controller:](#)** Developed a microcontroller-based analog axis controller for drone and gaming applications, with memory optimization, calibration tool (Python/PyQt5), and support for 9+2 axes.

**Technologies used:**

C, C++, C#, Python, Qt5, QML, STM32, ESP32, FreeRTOS, UART, I2C, SPI, MODBUS, RS485, pandas, numpy, matplotlib, GitLab-CI

## **BOSCH** - Junior Software Developer

**2017 - 2018**

- Developed and maintained advanced hardware diagnostic software for automotive steering systems, simulating realistic CAN bus conditions for thorough sensor testing.
- Successfully integrated new sensor hardware into existing systems, significantly improving testing capabilities.
- Initiated and implemented automated GUI testing using Qt Squish, ensuring software reliability and stability.

### **Technologies used:**

C++, Qt4, PowerShell, SVN, Doxygen

## **EDUCATION**

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### **Green Fox Academy**

**2017**

Embedded Programming

### **Óbuda University Bánki Donát**

**2012 - 2016**

Mechanical Engineering, BSC

### **Budapest University of Technology and Economics**

**2010 - 2012**

Mechanical Engineering, BSC

## **LINKS**

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My static web page about my projects: [OmniTinker](#)



Instagram mostly about Audio visualization projects: [martonstronghold](#)



Presentation (English) about [kitchen timer cube](#)



Presentation (Hungarian) about [Audio reactive LED Hyper Cube](#)