Richard Barabasi

If you have time, please visit my portfolio site for in depth details |
You will find my skills and conducted projects in navigable and sortable structure |
https://picsiri.github.io |

Personal data

Date of birth: 1996.05.11.

Address: 1203. Budapest, Vízisport utca 5 2/2

Email: barabasi.richard@gmail.com

Cellphone number: 0036 20 3313 707

Work experience

BOSCH Hungary Ltd. (2022.09 – 2022.12.) – Project Leader

I joined the department responsible for automotive steering systems and was assigned to a team handling torque sensor assembly. Although I received a great review at the end of my probation period and had a pleasant experience working there, I found the position to be too distant from the designing and creating aspects of engineering for me to be able to enjoy it.

European Knowledge Centre Ltd. (2021.05 – 2022.09.) – Mechatronics engineer

- Project lead and lead developer – AGV project
  In this project, I took on the roles of mechanical and electrical design engineer and embedded software developer while managing other members' contribution to the project. Key contributions to the project from my part:
  - 3D design realization from the concept work of an industrial form designer, making a manufacturable and functional body for the robot.
  - Complete electronics design, from requirements specification to prototype board bring up activity with hardware debugging and version upgrades.
  - Firmware development on the two STM32 chips found on the main board in C++.
- Electronics engineer – UVC autonomous disinfection robot
  In this project, I supported the project owner with various contributions, mainly in the electrical field.
  - Developing the charger pistol for the robot.
  - Designing replacement ballast for the robot.
- Support engineer
  Tasks where I supported other engineers or performed various supporting duties.
  - Managing an in house 3D printer farm.
  - Overseeing the manufacturing process of the prototype's frame of the UVC robot.
  - Maintenance of the UVC robots in house and on site.

Sagax Communications (2018.05. – 2021.05.) – Mechatronics engineer

- Application engineer – SDR system project
  In this project, I was in a key role and contributed in various ways. Key contributions:
  - Developing the embedded control panels for the RF multiplexer circuits.
  - Took part in architecture design.
  - Deploying system, system maintenance
- Electric engineer, embedded software developer – Tuner module development
  In this hardware development project I worked with a senior RF colleague and he made the RF components and related design specifications. Everything else was my task.
  - Design and layout from requirements list to prototype bring up activity
  - Firmware writing
  - Conducting lab measurements for performance evaluation
- Application engineer – Drone Detection and Range Finding
  I joined this project because of my hobby of drone building. Although my main contribution was to pilot the drones for the measurements, I took a key part in conducting them as well.
  - Created 3D design and printed the struts of the DF antennas.
  - System testing in lab and on field.

Morgan Advanced Materials (2017.06. – 2017.09.) – Assistant engineer

Created technical drawings of high performance motor brushes from costumer requests to printouts for line workers. Supported the daily tasks of the senior engineers.

Education

Mechatronics Engineer BSc (2020)

Budapest University of Technology and Economics.

Started as a mechanics engineer, changed in 3rd semester to mechatronics as I liked electronics and embedded programming more than I have met in pure mechanics tuition.

Mentionable non-work projects

Thesis Project

In this project, I had to develop an AGV. I got high recognition for this work, but I ran out of time, as the scope was too large. Keywords, key technologies:

- C/C++ RTOS, ESP32, BLE, WiFi, ATMEL 328p, Arduino
- Altium, 4 layer PCB, master slave MCU architecture, kinematics motion control
- Servo motors, Stepper drivers, OLED display, BMS
- Mechanical robot arm design, 3D printable body design

3D printer building

In 2020, I started building my own 3D printer because my first printer reached the end of its lifetime. This printer is based on an open source project called HevORT. I forked the project, made my modifications and managed to build a high-end machine.

Multicopter building

It started as a hobby when I got my first one and became a professional user when I started using it for work. I designed and built a 550 hexacopter that could carry a considerable payload. This was necessary for one of my professional projects. I tried to get into the agricultural branch of the drone technology, successfully generating a survey of a 5-hectare field.

Platform independent app development

Developed an Android IOS and web-supported application that has educational purposes. I came up with this idea a while ago and the opportunity came for me to make it into reality. When complete, you will find it on Google Play as “Nine Dimensions”.

Technology and Tools

3D CAD design and related

- Autodesk Inventor, SOLIDWORKS, Ultimaker CURA, Autodesk AutoCAD, CADQuery

ECAD design

- Altium Designer and Altium 365 platform, SOLIDWORKS integration, LTSpice

IDEs

- Visual Studio, Visual Studio Code

Coding

- Git
- C/C++, C#, Python, Dart

Misc

- ATmega, STM32, ESP32
-
- Advanced Windows and Linux user
- Advanced Office user

Languages

Hungarian (mother tongue), English (fluent, B2 certificate), German (moderate, C1 certificate)