Jacek Łysiak

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Work Experience

01.2021-present, **Arista Networks**, Dublin, *Software Engineer*

09.2020-11.2020, **NoMagic sp. z .o.o.**, Warsaw, *Software Engineer Intern*

I created a middleware for controlling industrial robots (Fanuc, ABB) using computer vision and machine learning [Python/C++/KAREL/RAPID/ROS].

04.2019-04.2020, **Spaceti Ltd**, Prague/Warsaw[remote], *Firmware and Embedded Linux Developer*

I developed a firmware for IoT sensors [C/TI-ROTS], designed and implemented software running on message hub devices [Python/Bash]. I created software and devices for automation of hardware manufacturing [Python/Bash].

04.2018-12.2019, **University of Warsaw**, Warsaw, *Student member of HENI project*

I developed a sender-initiated MAC protocol for whip6 OS network stack [nesC]. I built a small-scale test platform for high time-resolution code execution tracking using logic analyzers and external synchronization mechanisms [C/Python]. I deployed a homogeneous testbed for IoT network protocols consisting of 950 low-power devices.

09.2017-05.2018, **Eracent**, Warsaw, *Junior Angular Developer*

Worked on the Query Designer - single page application written in Angular. Introduced drag-and-drop and custom data validation.

07.2017-09.2017, **Samsung R&D Poland**, Warsaw, *Firmware Developer Intern*

Firmware development for STM32 chips - bare metal approach [C]. Prepared environment and tools for testing and monitoring code execution [Bash]. Supported hardware engineer during the design process of both electrical and mechanical parts.

07.2015-10.2016, **GenesisMobo**, Warsaw, *Firmware Developer & Electronics Designer*

Designed and prototyped the ultra-low power device for security systems - positioning and tracking of stolen objects. Did all stages from PCB to the final prototype on my own.

Independent Projects

- **Racing Drone Autopilot**
  As a part of the Warsaw MIMotaurs team competed in the AlpahPilot Autonomous Drone Racing Competition. Classified in 4th place in AIRR 2019 World Championship. Our drone completed the whole track fully autonomously as one of only three (out of nine) teams. Classic CV and neural networks algorithms have been used for solving track perception. Guidance and navigation were based on measurements from the accelerometer, gyroscope and linear lidar.
- **Neural Networks for Overlap Muon Track Finder**
  Python helper library for automation of training and testing of neural network models using data from CMS detector. Tool developed during my MSc research project in Physics.
- **Query Designer**
  BSc team project done for Eracent company. Modern single page application using .NET Core 2 and Angular. The goal was to allow users to build SQL queries without knowledge about it.

Education

2016-2020, **Master of Computer Science**, University of Warsaw, MISMaP, GPA: 4.5/5

Thesis: *An Implementation and Evaluation of Robust Link Layer for Low-power Wireless Network Protocol Stacks*

2016-2018, **Master of Physics**, University of Warsaw, MISMaP, GPA: 4.5/5

Field: *Mathematical and computer modelling of physical processes*
Thesis: *Machine learning application in CMS detector 1-level Muon trigger*

2014-2018, **Bachelor of Computer Science**, University of Warsaw, MISMaP, GPA: 4.5/5

Final project: *Query Designer - visualized SQL query builder, project realized on an order for the Eracent sp. z o.o.*

2013-2016, **Bachelor of Physics**, University of Warsaw, MISMaP, GPA: 4.5/5

Field: *Solid State Physics*
Thesis: *Investigation of interaction of GaN nanowires with bulk MoS2*

Relevant coursework

Distributed Systems, Compilers Construction, Operating Systems, Concurrent programming, Microprocessors Programming, Algorithms and Data Structures, Programmable Logic Devices, Deep Neural Networks, Security of Computer Systems, Linear Algebra

Skills

Programming languages:

+++ C, Python, Bash
++ C++, asm (ARM, x86), nesC
+ Rust, Java, JavaScript, TypeScript, VHDL, Verilog, KAREL, RAPID

Technologies, tools, and frameworks:

git, make, TensorFlow, ROS, OpenCV, whip6, TI-RTOS

Familiar with:

Linux Programming & Administration, Design Patterns, Digital Circuits Design, FPGA, PCB Manufacturing, Electronics Laboratory Equipment, Network Protocols, Embedded Systems, Data Analysis, PID Controllers

Languages:

Polish (native), English

Fields of interests

Electronics, Low-level programming, Self-driving cars, IoT, DIY, Automation and control, Teaching, Judo, Cuisine, CLI tools