Vítězslav Lužný

Citizenship: Czech Republic
Birth date: April 27, 2001
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Education

Charles University, Faculty of Mathematics and Physics — September 2020 – Present
pursuing bachelors degree in Mathematical Modelling — *Prague, Czech Rebublic*

Gymnázium Christiana Dopplera — September 2016 – June 2020
School-leaving examination — *Prague, Czech Republic*

Selection of Additional Courses

Introduction to Machine Learning with Python — Winter semester 2022/2023
RNDr. Milan Straka, Ph.D.
- Formerly known as "Machine Learning for Greenhorns"

Programming and data processing in Python — Summer semester 2020/2021
Mgr. Michal Belda, Ph.D.

Programming 3 — Winter semester 2020/2021
RNDr. Martin Pergel, Ph.D.
- C/C++ course

Work Experience

Technician — July, 2022 – Present
Nano Optics group, Institute of Photonics and Electronics of the Czech Academy of Sciences
- Currently working on "Analysis and reconstruction of iSCAT fluctuation patterns"
- Developing a controlling software for high speed iSCAT microscopy (C/C++, Python)
- Developed a controlling system for phase vortex generation using heat signature (Arduino, C/C++)

Speckle pattern analysis — January, 2022 – June, 2022
Nano Optics group, Institute of Photonics and Electronics
- (Python)

Software development for high speed iSCAT microscopy — September, 2021 – November 2021
Nano Optics group, Institute of Photonics and Electronics — February, 2021 – May, 2021
June, 2020 – September, 2020
- (C/C++, Python, LabView)

Internship — January, 2018 – December, 2019
Nano Optics group, Institute of Photonics and Electronics
- Point Spread Function estimation from measurements (Matlab, LabView)
- Developed a controlling software for confocal iSCAT microscope (C#)
- Participated in Nano Optics exposition at Veletrh vědy

Extending Jídelna application — October, 2018 – February, 2019
BARDA SW, HW, s.r.o.
- Bug fixes (Java)

Extending module Objednávky in Jídelna application — July, 2018 – August, 2018
BARDA SW, HW, s.r.o.
- Data synchronization (Java)

Projects, Competitions & Achievements

Qminers Quant Hackathon November 2022

- **Math and machine learning competition** to develop a betting strategy for beating a virtual hockey bookmaker
- Lead the team **greenhorns2** as **captain**
- Won the **6th place** (out of 18) at the finale

Qualified for working with electronic devices From May 2022

Institute of Photonics and Electronics

- Trained according to the §4 Decree 50/1978 Coll.

International Young Physicists' Tournament September 2018 - June 2020

- Demonstrated leadership skills as the **captain** of the team **Kudlankográl GChD**
- Personally worked on many open-ended inquiry problems, such as *Popsickle Chain Reaction*, *Moiré Thread Counter*, *Sweet Mirage* and more
- **Won the 2nd place at the national level in 2020**
- Won the 3rd place at the regional level in 2019

Highschool technical project (Středoškolská Odborná Činnost - SOČ) 2020

- Project *Graphics Engine in C++ and OpenGL*
- Learned about graphics programming and programmed a library for simple 3D and 2D graphics in OpenGL
- Won the 3rd place at the regional level

Matfyz FEAT 2018

- Teamwork, project Acoustic Levitator
- Won the Jury Prize

Specialized Skills

Programming Languages: C/C++, Python and more
Languages: Czech (native), English
Other: Machine learning

Other Interests

Sports: Swimming, Hiking