Petra Ratkai

43 Sedlescombe Road, SW61RE London, United Kingdom | petra.ratkai@gmail.com | +447555604924
linkedin.com/in/petra-ratkai-7baa781a2 | https://github.com/petraratkai

EDUCATION

MEng Electronic and Information Engineering, *Imperial College London* 09/2019 – present | London, UK
- Currently averageing a First
- 3rd year modules: Introduction to Machine Learning (90%), Operations Research(91%), Artificial Intelligence, currently taking: Network and Web Security, High Level Programming, Performance Engineering and Embedded Systems.
- Relevant modules (Year 2): Instruction Set Architectures and Compilers (76.01%), Information Processing (74.10%), Discrete Mathematics, Software Systems, Communication Systems
- Relevant modules (Year 1): Programming (87.91%), Digital Electronics and Computer Architecture (72.69%)
- Taking an Imperial Horizons French language course alongside the engineering modules

BSc Computer Engineering, *Budapest University of Technology and Economics* 09/2018 – 06/2019 | Budapest, Hungary
- Relevant modules: Programming, Computer Architectures, System Modeling, Theory of Computing, Calculus and Physics
- Overall year average: 4.4/5.0 (First class)
- Took electives: Finance, Ergonomics, Innovative Startups

High School and Hungarian Final Exams, *Obudai Arpad Secondary School* 2012 – 2018 | Budapest, Hungary
- Advanced level exams: Physics (98%), Mathematics (94%), English (94%)
- Grade 5/5 in all subjects

WORK AND VOLUNTARY EXPERIENCE

Undergraduate Teaching Assistant, *Imperial College London*
08/2021 – present
- Providing teaching assistance for first year students in Programming and Mathematics

Amazon Spring Technology Insights, *Amazon*
04/2021
- Participated in the Amazon Spring Technology Insights program, where I improved my **React js** and Spring Boot skills in the technical sessions
- Attended an Agile Software Development and a Software Optimization workshop using **Python**
- Attended an IamRemarkable session

Volunteering, *Obudai Arpad Secondary School*
2012 – 2019 | Budapest, Hungary
- Volunteered each year at several events, for example at a Mathematics competition where I carried out Physics experiments, volunteered at the school's Freshers' Camp

Campsite Coordinator, *S.O.F.A GmbH*
2020 | Germany
- Worked as a campsite coordinator near Munich in the summer

SKILLS, ACTIVITIES AND ACHIEVEMENTS

Imperial College London Riding and Polo
Have been part of the horse-riding competition team, participated in BUCS competitions

First Ascent International, *invitation*
Was invited as one of the top 20 most impressive Computer Science students to participate in the four day event in Milan, Italy

Technical skills
Excellent in **C++** and **C**
Good **F#, node js**, **React js**, **Python** skills
Experienced in using **MS Office**, **Linux** and **Github**

Languages
Hungarian (native), English (fluent), German (advanced), French (intermediate)

12th place in the 2016 Hungarian Young Physicist's Tournament (HYPT)
Had to carry out an open-ended Physics experiment, and then present the results

PROJECTS

Mars Rover 05/2021 – 06/2021
- Designed a Mars Rover in a group of 6 people, each person responsible for a different subsystem of the Rover
- The user can input commands through the website and then the Rover executes them while finding and avoiding the obstacles in its environment
- Implemented the web application of the Rover, which functioned as the user interface of the Rover
- Made both the back- and the front-end, both running on AWS and incorporated the usage of a database

Game development using AWS and FPGAs 02/2021 – 04/2021
- Made a car racing game in a group of 6 people, where the controllers were FPGA devices, and the graphical interface was a website running on AWS
- Was mostly working on the game logic, the TCP server running in the AWS instance, and the TCP client running locally

C compiler 02/2021 – 04/2021
- Implemented a functional C to MIPS assembly compiler in a group of 2 people
- Main features: integer, float and double operations, basic pointer arithmetic, various types of function calls that are compatible with the GCC conventions
- Was working on creating the Abstract Syntax Tree and the Code Generation parts but also helped with the Parser and the Lexer

MIPS CPU 11/2020 – 12/2020
- Created a functional MIPS CPU and a complete test bench in a group of 6 people
- Was leading the testing subgroup
- Grade gotten for the project: 92%, where both the CPU and the test bench passed all tests

Circuit Simulator 05/2020 – 06/2020
- Designed and implemented a Circuit Simulator program that does transient analysis on electronic circuits
- Works on any circuit that contains resistors, capacitors, inductors, voltage and current sources

Train ticket selling program 02/2019 – 04/2019
- Implemented a simple train ticket selling program using OOP
- The user inputs the starting and destination stations and the date and the program outputs the ticket and reserves a seat

Farming Game 11/2018 – 12/2018
- Implemented a Farming Game with a graphical interface