Luka Kurešević

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Education

Faculty of Sciences, University of Novi Sad Oct 2023 – June 2026*
BSc in Computer Science

- Current GPA: 10.00/10

Gymnasium "Jovan Jovanović Zmaj", Novi Sad Sept 2019 – June 2023
Special Course for Students Gifted in Mathematics

- GPA: 4.96/5

Foundation "Center for Young Talents", Novi Sad Sept 2019 – June 2020
Competitive Programming Course

Primary School at the "Jovan Jovanovic Zmaj" Gymnasium Sept 2017 – June 2019
Honors Class

- GPA: 5.00/5

Skills

Programming Languages: Python, C/C++, Wolfram Language, Java, Prolog, C#

Technologies: PyTorch (including Torchaudio and PyTorch Geometric), Pandas, Numpy, Scikit-learn, OracleSQL

Projects

Reinforcement Learning in Logic Synthesis* (work in progress) (link) Oct 2024 – Jan 2025*
Coursework for "Algorithms in Hardware Design" (Faculty of Sciences, University of Novi Sad)

The project considers a **Markov Decision Process** formulation of the **logic synthesis** problem, as proposed by earlier works. A **neural network** consisting of a combination of **graph** and **fully connected** layers is trained for the task of providing **synthesis recipes**. Performance of synthesis recipes derived from such an **RL** model is examined in later stages of **FPGA CAD flow**.

Performance comparison of CNN and LSTM Architectures for Environmental Sound Classification (link) March 2024 – June 2024
Coursework for "Experiments with Neural Networks 1" (Faculty of Sciences, University of Novi Sad)

- Preprocessed audio samples from UrbanSound8K, representing them as **Mel Spectrograms** for **machine learning** purposes
- Conducted preliminary experiments on different **ResNet** (CNN) and **LSTM** architectures over a smaller number of epochs, with the goal of selecting candidates for further consideration
- Examined the effect of network complexity, **dropout layers** and **learning rates** on training and test accuracy
- In the final experiment round, performed **10-fold validation** over a larger number of epochs, evaluating selected candidates against eachother

Competitive Programming

Qualified for Nationals 2020, 2023

Silver Award, District Competition 2023

Bronze Award, District Competition 2020, 2022

Volunteer Work

Data Science Conference Europe 2024: Moderated online tech tutorials and assisted hosts during the live event

Languages

English (C2, Cambridge Proficiency Exam), **German** (B1, Internationales Kulturinstitut Vienna), **Serbian** (Native)