

# MLADEN BAŠIĆ

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## EXPERIENCE

### Assistant at Petnica Science Center

Department of Applied Physics and Electronics 📅 2018 – present

- Held lecture about Linear Algebra and Image Processing
- Held workshops in Python programming, Physics Simulation and Digital Signal Processing
- Supervised project in *Hybrid Model for Sentence Completion*

### Member of ETF Robotics group

Renesas MCU Rally Faculty team 📅 2019 – present

- Developed physics simulation of model vehicle with sensors and localization
- DC motor testing and measurement

MATLAB Simulink

## PROJECTS

### Relative Camera Pose Estimation

Petnica Science Center Machine Learning Seminar 📅 summer 2020

- Developed a model for estimating relative change in camera position between two frames
- Model consisted of two siamese AlexNets and a fully connected layer which outputs relative translation and rotation
- Training was done on car driving dataset

Python PyTorch KITTI Dataset

### Automatic Extractive Summarization of Multiple Documents

Petnica Science Center 📅 summer 2018

- Multi-document extractive summarization
- Text ranking done using Recursive Neural Networks
- Sentence selection done using ROUGE metric with greedy approach and linear programming

Python TensorFlow DUC Dataset

### The Analysis of Ball Balancing Robot Control System

Petnica Science Center 📅 summer 2017

- Simulation of robot's physics and imperfect sensors
- Signal filtering done using Complementary and Kalman filter
- System stabilization done using PID and LQR controller

📄 Paper MATLAB Python

### Word Recognition from Gyroscope Signals

Petnica Science Center 📅 summer 2016

- Built own database with gyroscope recordings in different frequencies
- Gyroscope data recorded using *MicroPIC* board
- Word recognition done using Dynamic Time Warping method

📄 Paper MATLAB MicroC

## EDUCATION

### B.Sc. in Electrical Engineering and Computer science (expected)

University of Belgrade 📅 2018 – present

Signals and Systems Department  
Ongoing GPA: 9.3 / 10

### Grammar school

Special Mathematics class 📅 2014 – 2018

Graduation project: Genetic Algorithm

## PROFESSIONAL SKILLS

Python  
MATLAB / Octave  
C++  
Linux  
Bash  
Git



## LANGUAGES

English  
Serbian (native)



## OTHER

### Course Projects

- Handwritten Digit Recognition (Neural Network from Scratch) (MATLAB)
- Digital Circuit Simulator (C++)
- DataFlow Equation solver (C++)

### Science Fair Projects

- Automatic Checkers Table
- Self Playing Guitar
- Ball Chasing Robot
- Arduino Sunflower

### Tech Confereces Attended

- RoboMac 2020 Self-driving robots competition
- Pie&AI Belgrade 2020 Events
- DesCon 2019: First place in *Capture the Flag* event
- BalCCon 2018 and 2019 (Volunteered)
- WonderlandAI 2019 (Volunteered)

## SOFTSKILLS

Work Under Pressure Responsibility  
Fast learning Team Work Flexibility