

# Matej Ciglencečki

Software engineer with over 1 year of experience, highly interested in computer science, software engineering, and machine learning. Throughout my work and academic experience, I've developed excellent problem-solving capabilities accompanied by a strong sense of ownership. I'm fascinated by well-written libraries, software modularity, and design principles.

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## Experience

### [Photomath](#) – Software Engineer Intern

July 2022 – Oct 2022

- Developed and deployed cloud services that parse, transform, enrich and deliver millions of events used for verifying Photomath's core regression tests (**Python**, **GCP**, **Datastream**, **Pub/Sub**, **Dataflow**, **Cloud Run**, **GitHub Actions**).

### [Memgraph](#) – Software Engineer

Oct 2020 – Oct 2021

- Designed a **PostgreSQL** database schema and wrote feature specifications for Memgraph Cloud platform. After successful implementation, the platform achieved 300% user growth in the first month.
- Implemented Memgraph Cloud's backend (**node.js**, **TypeScript**, **Express**, **Sequelize**, **PostgreSQL**) that supports +400 active users, manages **AWS EC2** instances, and supports monthly user billing based on user usage.
- Set up **Elastic Stack** on **AWS EC2** to analyze application logs (**AWS CloudWatch**) in **Kibana** dashboards.
- Wrote unit and integration tests (**Jest**).
- Wrote [educational lessons](#) and created graph datasets (**Memgraph**, **Cypher**).

### [Memgraph](#) – Software Engineer Intern

July 2020 – Oct 2020

- Implemented geographic graph data visualization in Memgraph Lab (**TypeScript**, **Leaflet**).
- Refactored codebase via design patterns (**TypeScript**, **Angular**).
- Wrote a [summary blog post](#).

## Skills

Main languages:

**Python**, **TypeScript**, **C**

Other:

**git**, **Linux**, **bash**, **Docker**, **Elastic Stack**, **Java**, **C++**, **React**

Backend development:

**node.js**, **Express**, **Sequelize**, **FastAPI**, **GCP**, **AWS**

Databases:

**PostgreSQL**, **SQL**, **Memgraph**

Machine learning and data science:

**scikit-learn**, **PyTorch**, **numpy**, **pandas**, **matplotlib**, **R**, **PyTorch Lightning**

## Education

### **M.Sc Data Science** – [Faculty of Electrical Engineering and Computing](#), Zagreb

Oct 2021 – July 2023

relevant courses: *Advanced Algorithms and Data Structures, Machine Learning, Deep Learning, Statistical Data Analysis, Multivariate Data Analysis, Technology Entrepreneurship, Mathematical Finance, Business Intelligence*

(expected)

### **B.Sc Computer Science** – [Faculty of Electrical Engineering and Computing](#), Zagreb

Oct 2017 – July 2021

relevant courses: *Algorithms and Data Structures, Object Oriented Programming, Design Patterns, Databases, Probability and Statistics, Artificial intelligence, Communication Networks, Network Programming, R language*

## Workshops and projects

### [LUMEN Data science competition – GeoGuesser AI Agent](#)

2022

- Led a finalist team of three. The goal was to predict the location of 64 000 Google Street View images in Croatia.
- Achieved 2nd place in model performance with a mean error of 22km, measured as the great-circle distance from the true to the predicted location.
- Used **Python**, **PyTorch**, deep learning, geospatial feature engineering and computer vision methods to transform geographic data, process images, train multiple models and predict locations of unseen Google Street View images.
- Implemented a **FastAPI** server that allows inference on a trained model.
- Wrote project documentation and technical documentation.

### [Implementation of driver fatigue detection in an EEG-based system – Data Science course project](#)

2022

- Successfully reproduced results and methods described in the research article with **Python**.
- Performed data analysis and feature extraction on driver's EEG data. Processed 7200 seconds worth of EEG data.
- Trained 4 different models, successfully predicted driver's fatigue with **scikit-learn** with +99% accuracy, and achieved 1% better results compared to the research article.

### [AI BattleGround hackaton – AI Agent](#)

2022

- Worked in a team of four. Implemented a software agent in **Python** which plays against other agents in a turn-based game. Agents communicate via a streaming protocol, and based on the game's state the agent tries to perform the optimal move (*attack*, *switch characters*, or *use an item*). The game consists of multiple different characters, actions, and modifiers.

### [Student success analysis – Statistical Data Analysis course project](#)

2022

- Led a team of 4 in the Statistical Data Analysis course project written in **R**.
- Analyzed student success data with the following statistical methods: t-tests, chi-squared test, Fischer's test, normality tests, f-tests, ANOVA, and linear regression.
- Wrote a [final report](#) which describes the theory and the context of used statistical methods used in the project.

### [Soft skills academy – leadership group](#)

2020

### [DataCrunch – data science academy](#)

2019, 2018

- Predicted next year's bankruptcy of Croatian companies with machine learning techniques written in **R**.

### [AG04 – Spring Boot Summer School](#)

2019

- Developed a web application with **Java Spring** in a group of 5 and completed a Java Spring course.