



Adrian Mladenic Grobelnik

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ABOUT ME

Driven and creative junior A.I. researcher & engineer with 5+ years of experience researching, adapting and deploying state of the art A.I. systems. Eager to support academia and industry in realizing impactful A.I. applications. Published 6 papers, deployed 3 full stack A.I. architectures.

WORK EXPERIENCE

Junior Artificial Intelligence Researcher & Engineer

Jozef Stefan Institute [27/07/2020 – Current]

Primarily, I focus on researching, adapting and deploying Artificial Intelligence systems. My domain of expertise is Natural Language Processing, commonsense A.I. and topic popularity prediction.

Secondarily, my role is to develop and deploy full stack web applications with interactive data visualizations.

Examples include

"multicomet.ijs.si" and "at.ircai.org".

Moreover, I occasionally advise and assist PhD students in writing their scientific articles.

Furthermore, I emphasize sharing my work with the scientific community through publishing and presenting research papers at the relevant conferences. So far, I have published 3 papers titled "Next Big Thing in Science", "MultiCOMET - Multilingual Commonsense Description" and "Understanding Text Using Agent Based Models".

Artificial Intelligence Intern for Healthcare Applications

Carnegie Mellon University (Mentored by Prof. Rayid Ghani) [30/08/2023 – 28/09/2023]

City: Pittsburgh

Country: United States

At CMU, I delved deep into real-world challenges of AI in healthcare. Key contributions:

- Pre-trained and fine-tuned large language models tailored to healthcare applications as part of the AI for Social Good initiative.
- Developed a comprehensive machine learning pipeline, allowing others to train their own models for the same applications.
- Collaborated on solutions set for deployment at IHHN Hospital, Pakistan.

PROJECTS

AI & Assistive Technology in Media

[31/07/2020 – 31/03/2021]

I developed a full stack web application providing real-time interactive media coverage for the taxonomy of assistive technology in the form of an interactive visualization. This was done in collaboration with University College London and the International Research Centre On Artificial Intelligence.

MultiCOMET Web

[31/07/2020 – 31/08/2022]

I created and deployed a full stack interactive web application for multilingual commonsense description. Users can input any sentence, and request seven types of commonsense descriptions in a variety of languages. This was done under the scope of the project Development of Slovene in a Digital Environment.

Link: multicomet.ijs.si

PUBLICATIONS

Best Paper Award: Emergent Behaviors from LLM-Agent Simulations

[2023]

Conference on Data Mining and Data Warehouses

This paper investigates the emergence of complex behaviors in multi-agent simulations using Large Language Models. Through progressively intricate simulations, we observe emergent behaviors ranging from simple games to geopolitics, highlighting the potential of LLMs in replicating societal structures.

A commonsense-infused language-agnostic learning framework for enhancing prediction of political bias in multilingual news headlines

[2023]

Knowledge-Based Systems

We propose a framework to predict political bias in multilingual news headlines using Inferential Commonsense Knowledge and a Translate–Retrieve–Translate strategy. Our evaluations highlight improved accuracy and underscore the impact of translation quality on prediction performance.

SLOmet – Slovenian Commonsense Description

[2022]

Conference on Data Mining and Data Warehouses

This paper presents Slovenian commonsense description models based on the COMET framework for English. Inspired by MultiCOMETs approach to multilingual commonsense description, we finetune two Slovenian GPT-2 language models.

Understanding Text Using Agent Based Models

[2021]

Conference on Data Mining and Data Warehouses

The paper proposes a novel approach to text understanding and generation focusing on short and simple stories. The proposed approach attempts to understand and generate stories by creating an explainable, agent-based world model of the story.

Link: https://videlectures.net/sikdd2021_mladenic_grobelnik_text/

MultiCOMET – Multilingual Commonsense Description

[2020]

Conference on Data Mining and Data Warehouses

This paper presents an approach to generating multilingual commonsense descriptions of sentences provided in natural language. We have expanded on an existing approach to automatic knowledge base construction in English to work on different languages.

Link: http://videlectures.net/sikdd2020_mladenic_grobelnik_multicomet/

The Next Big Thing In Science

[2019]

Conference on Data Mining and Data Warehouses

This paper presents an approach to predicting the future development of scientific research based on scientific publications from the past two centuries. We have applied machine learning methods on the Microsoft Academic Graph dataset of scientific publications.

Link: http://videlectures.net/sikdd2019_mladenic_grobelnik_next_big_thing/

EDUCATION AND TRAINING

Wolfram Summer School Alumnus

Wolfram Summer School (Mentored by Stephen Wolfram) [26/06/2023 – 16/07/2023]

City: Boston

Country: United States

Website: <https://education.wolfram.com/summer-school>

Field(s) of study: Artificial Intelligence | Large Language Models | Multi-agent Simulations

Link: <https://community.wolfram.com/groups/-/m/t/2960085>

I worked closely with Stephen Wolfram to develop simulations using the Wolfram Language to create and analyze complex multi-agent systems, with agents represented by Large Language Models such as GPT-3.5 and GPT-4. This process also involved crafting detailed prompts for these agents.

High School Graduate & Former Head Boy

British International School of Ljubljana [21/08/2009 – 31/07/2021]

Address: C. 24. Junija 92, 1231 Ljubljana (Slovenia)

Website: <https://britishschool.si/>

HONOURS AND AWARDS

1st Placed Junior Competitive Programmer in Slovenia

Association for Technical Culture of Slovenia [08/06/2018]

Link: <https://www.zotks.si/>

Honorable Mention

Junior Balkan Olympiad in Informatics [21/09/2016]

After competing with the best under-18 competitive programmers in the Balkans, I received an honorable mention. Moreover, I was one of the youngest competitors at the age of 13.

Link: <http://jboi2016.cs.org.mk/>

2nd Placed Junior Competitive Programmer in Slovenia

Association for Technical Culture of Slovenia [11/01/2018]

Link: <https://www.zotks.si/>

1st Placed Debate Team

World Scholars Cup, Ljubljana Regional Round [03/02/2019]

Link: <https://www.scholarscup.org/>

1st Placed Argumentative Essay

World Scholars Cup, Ljubljana Regional Round [04/02/2018]

Link: <https://www.scholarscup.org/>

Silver Medal

ACM High School Competition in Computer Science and Informatics [23/03/2019]

Link: <https://rtk.ijs.si/2019/rezultati.html>

2nd Placed European Team

World Scholars Cup, Kuala Lumpur Global Round [23/06/2018]

Link: <https://www.scholarscup.org/>

3rd Placed European Team

World Scholars Cup, The Hague Global Round [21/06/2019]

Link: [scholarscup.org](https://www.scholarscup.org/)

1st Placed Slovenian

World Scholars Cup, Yale University Final Round [21/11/2018]

Link: [scholarscup.org](https://www.scholarscup.org/)

DIGITAL SKILLS

Python / Java / C/C++ / HTML5/CSS, Javascript / TypeScript / Angular framework / Node.js / Bootstrap / D3 / Apache ECharts / PyTorch / Git / Hugging Face Transformers / JavaScript / Wolfram Language / SQL / Prompt Engineering

LANGUAGE SKILLS

Mother tongue(s): **Slovenian** | **Croatian**

Other language(s):

English

LISTENING C2 READING C2 WRITING C2

SPOKEN PRODUCTION C2 SPOKEN INTERACTION C2

French

LISTENING B1 READING B1 WRITING B1

SPOKEN PRODUCTION B1 SPOKEN INTERACTION B1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

SOCIAL AND POLITICAL ACTIVITIES

Thessaloniki International Forum '21-7th International Forum of EYP Greece

[Thessaloniki, Greece, 19/08/2021 – 26/08/2021]

The European Youth Parliament is a peer-to-peer educational programme that brings together young people from across Europe to debate the pressing issues of our time. I participated in their sessions as a delegate, debating a variety of issues European society presently faces and proposing a multitude of solutions drafted in a comprehensive resolution document.

Link: <http://www.eypgreece.org/en/page/1063/call-for-delegates-tif-21>

91st International Session in Hamburg, Germany

[Hamburg, Germany, 20/09/2019 – 29/09/2019]

Link: <https://eyp.org/90th-international-session-in-hamburg-germany/>

5th National Selection Conference of European Youth Parliament Slovenia

[Ljubljana, Slovenia, 14/07/2019 – 19/07/2019]

Link: <https://m.facebook.com/ljubljana2019/community/>

12th Regional Session of European Youth Parliament Ljubljana, Slovenia

[Ljubljana, Slovenia, 15/02/2019 – 17/05/2019]

Link: <https://eypslovenia.org/>

HOBBIES AND INTERESTS

Attending Computer Science Conferences

Guitar

Swimming

Piano

Skiing