

Sebastian Mežnar

MACHINE LEARNING RESEARCHER

Vojkova 6, 6330 Piran, Slovenia

☎ (+386) 51-322-108 | ✉ meznar.sebastian@gmail.com | 🏠 smeznar.github.io | 📱 smeznar | 📧 Sebastian Mežnar

🌐 sebastian-meznar



About me

Machine learning enthusiast with a strong interest in interpretable machine learning, machine learning on graphs, symbolic regression (equation discovery), and data science. In my free time I enjoy watching/playing sports and reading fantasy novels.

Work Experience

Actual I.T.

SOFTWARE ENGINEER

- Programed different parts of a web application (JavaScript),
- Build JSON schemes for validating API request and responses.

Koper, Slovenia

Summer 2017

Mercury Processing Services International

SOFTWARE ENGINEER

- Developed parts of a mockup Android application (Android/Java),
- Ported functionality between different versions of an Android application (Android/Java),
- Made unit tests for various parts of a web application (C# & JavaScript),
- Developed and improved parts of a web application (C# & JavaScript).

Koper, Slovenia

Summer 2017 - 2019

Jožef Stefan Institute, Department of Knowledge Technologies

MACHINE LEARNING RESEARCHER

- Developed machine learning algorithms for various tasks on graph (network) data,
- Developed an approach for symbolic regression,
- Wrote several papers on general ML tasks, graph (network) related ML tasks, and symbolic regression.

Ljubljana, Slovenia

Mar 2020 - Sep. 2022

Jožef Stefan Institute, Department of Knowledge Technologies

YOUNG RESEARCHER

- Developed machine learning algorithms for various tasks on graph (network) data,
- Developed an approach for symbolic regression,
- Wrote several papers on general ML tasks, graph (network) related ML tasks, and symbolic regression.

Ljubljana, Slovenia

Oct. 2022 - Present

Education

Srednja tehniška Šola Koper

HIGH SCHOOL GRADUATE

- High school diploma with a focus on computer science.

Koper, Slovenia

Sep. 2012 - Jun. 2016

University of Ljubljana, Faculty of Computer and Information Science

DIPLOMIRANI INŽENIR RAČUNALNIŠTVA IN MATEMATIKE (UN)

- Bachelor's degree in computer science and mathematics with a focus on courses related to machine learning, algorithms, and data science.
- Bachelor's thesis from the field of machine learning with the title: "Modeling the playstyle of a basketball team from spatial data"

Ljubljana, Slovenia

Oct. 2016 - Sep. 2019

University of Ljubljana, Faculty of Mathematics and Physics

MAGISTER INŽENIR RAČUNALNIŠTVA IN MATEMATIKE

- Master's degree in computer science and mathematics with focus on courses related to machine learning and data science.
- Helped as a tutor for CS and machine learning related subjects during third (extra) year.
- Master's thesis from the field of deep learning and equation discovery with the title: "Efficient generative model for algebraic expressions and equation discovery"

Ljubljana, Slovenia

Oct. 2019 - Aug. 2022

Jožef Stefan International Postgraduate School

DOKTOR ZNANOSTI

- Doctoral study in information and communication technologies.

Ljubljana, Slovenia

Oct. 2022 - Present

Publications

SNoRe: Scalable Unsupervised Learning of Symbolic Node Representations

IEEE Access

SEBASTIAN MEŽNAR, NADA LAVRAČ, BLAŽ ŠKRLJ

2020

Paper presents SNoRe, an unsupervised node embedding algorithm that achieves state-of-the-art performance and is interpretable.

Prediction of the Effects of Epidemic Spreading with Graph Neural Networks

Complex Networks 2020

SEBASTIAN MEŽNAR, NADA LAVRAČ, BLAŽ ŠKRLJ

2020

In this paper we explore how well epidemic spreading problems can be predicted with machine learning.

Predicting Generalization in Deep Learning via Metric Learning – PGDL Shared task

NeurIPS 2020 - competition

SEBASTIAN MEŽNAR, BLAŽ ŠKRLJ

2020

A technical report for the approach my team submitted to the PGDL NeurIPS 2020 competition.

Transfer Learning for Node Regression Applied to Spreading Prediction

Complex Systems

SEBASTIAN MEŽNAR, NADA LAVRAČ, BLAŽ ŠKRLJ

2021

This paper explores how effects of epidemic spreading on networks can be studied with more accuracy and fewer simulations. It is to our knowledge one of the first papers to explore transferability of the learned representations for the task of node regression.

Ontology Completion with Graph-Based Machine Learning: A Comprehensive Evaluation

MAKE

SEBASTIAN MEŽNAR, MATEJ BEVEC, NADA LAVRAČ, BLAŽ ŠKRLJ

2022

In this paper we present an approach for ontology completion using graph-based machine learning.

Efficient Generator of Mathematical Expressions for Symbolic Regression

arXiv

SEBASTIAN MEŽNAR, SAŠO DŽEROSKI, LJUPČO TODOROVSKI

2023

The paper presents an efficient approach for generating algebraic expressions with a variational autoencoder by looking at them as binary expression trees. Further, we combine the decoder with an evolutionary algorithm to improve symbolic regression results.

Competitions and Awards

NOTABLE

2015	Gold award, 11th place , Vegovo tekmovanje	Ljubljana, Slovenia
2019	1st place in Slovenia, 256 place overall , Google Hash Code	Virtual
2020	Dean's award for outstanding academic performance , FMF school year 2019/20	Ljubljana, Slovenia
2020	8th place , Predicting Generalization in Deep Learning, NeurIPS 2020 competition	Virtual

OTHER

2008 - 2019	Attendance , Vegovo tekmovanje	Slovenia
2016, 2018, 2019	Attendance , Univerzitetni Programerski Maraton (UPM)	Slovenia
2018, 2019, 2020, 2022	Attendance , Google Hash Code	Virtual

Skills

Programming	Python (main), Java (competent), C# (competent), Rust (basic), JavaScript (basic), R (basic), SQL (basic), ...
Writing	LaTeX, Markdown, HTML
Libraries	SciPy, PyTorch, Pandas, Matplotlib, Seaborn, ...
Languages	Slovenian, English, Italian

Extracurricular Activity

EDUCATION

Summer Schools

Various

ATTENDANCE

July 2022 - Present

- Zemanta Data Science Summer School 2022. A summer school focused on data science and recommender systems. July 2022, Ljubljana, Slovenia
- Generative Modeling Summer School 2023. A summer school focused on generative modeling. June 2023, Copenhagen, Denmark
- ESSAI & ACAI 2023. A summer school focused on various topics in AI. July 2023, Ljubljana, Slovenia.

Conferences

Various

ATTENDANCE

Dec. 2020 - Present

- Attended and presented at conferences: NeurIPS 2020, Complex Networks 2020, IPSSC 2022, ILP 2022, SCORES 2022, AAAI 2023 Spring Symposium Series, IPSSC 2023, ECML/PKDD 2023.
- Only attended: NeurIPS 2021, ICML 2021, LOG 2022.

University of Ljubljana, Faculty of sports

VOLLEYBALL COACH, THIRD RANK

- Coaching licence needed for coaching children.

Ljubljana, Slovenia

Sep. 2015 - Oct. 2015

EXTRA EXPERIENCE

Volley Club Portorož

BUILDING CARETAKER

- Took care of beach volleyball courts and buildings surrounding them,
- Rented beach volleyball courts,
- Helped with the organization of beach volleyball tournaments.

Portorož, Slovenia

Summer 2012 - 2016

Volley Club Portorož & Športno društvo Piran

COACH

- Couched children from different age groups.

Piran, Slovenia

Jun. 2015 - Sep. 2016

Klub Študentov Občine Piran

COUNCIL MEMBER

- Helped with the organization of different events,
- Attended meetings and voted at ŠKIS/ŠOLS as club's representativ,
- Was in charge of editing the club's website.

Piran, Slovenia

Nov. 2018 - Jan. 2022

IPS student council

COUNCIL MEMBER

- Helped with the organization of events.

Ljubljana, Slovenia

Oct. 2022 - Present

Jožef Stefan Institute

SCHOOL VISIT COORDINATOR

- Presented scientific work at the department of knowledge technologies to visitors of various age groups.

Ljubljana, Slovenia

Oct. 2022 - Present

Conferences & Summer School

ORGANIZATION

- IPSSC 2023. Volunteer work as part of abstract team (prepared the submission template and system, created the book of abstracts) and with various tasks during the conference.
- ESSAI & ACAI 2023. Helped as a volunteer with various tasks (setup, registration, lecture monitoring, ...).

Ljubljana, Slovenia

Dec. 2022 - Present

FREE TIME

GO Volley & Volley Club Portorož

VOLLEYBALL

- Top 4 finish 5 times with GO Volley,
- U18 national champion in the 2013/14 season with GO Volley,
- Third division champions with Volley Club Portorož in 2015/16 season.

Slovenia

2011 - 2016