

Education

- 2017–2020 **MSc in Computer Science**, FER Zagreb.
Structured Deep Learning With Graph Neural Networks. Machine Learning, Deep Learning, Distributed Systems, Heuristic Optimization, Advanced Algorithms, Text Analysis and Retrieval.
- 2014–2017 **BSc in Computer Science**, FER Zagreb.
Claim and Stance Classification in Online Discussions Using Machine Learning. Artificial Intelligence, Database Systems, Discrete Math, Statistical Data Analysis, Advanced Linux, Software Design.
TA: Digital Logic Experiments, Intro to Java, Interactive Computer Graphics.

Recent Experience

- current* **QuantCo**, ML Engineer, Remote.
- from* 05/2021 **Bloomberg**, *AI group*, Senior Research Engineer, Remote.
to 05/2022
 - Applying and following latest research in **language understanding** (*PyTorch*, *SKLearn*)
 - Training deep (primarily transformers) and traditional ML models (*PyTorch*, *SKLearn*)
 - Improving code quality, tests, and MLOps processes
 - Maintenance of internal back-end services (*KServe*, *Python*, *Docker*)
 - Annotation management for different NLP tasks (*labeling instructions*, *JavaScript*)
- from* 07/2019 **Google**, *Lens*, Software Engineering Intern, Zürich.
to 10/2019
 - Researched and implemented a font style detection **autoencoder ML model** (*TensorFlow*)
 - Enhanced an **image augmentation** tool in cross-team collaboration (*C++*)
 - Implemented a user-friendly image labeling front-end (*JavaScript*)
 - Implemented an accessibility contrast adjustment algorithm (*C++*)
- from* 04/2019 **Microsoft**, *Natural Language Understanding*, Applied Science Intern, Redmond.
to 07/2019
 - Adapted BERT for **joint intent classification and slot filling** in conversational NLU (*PyTorch*)
 - Collected, analyzed, and cleaned a large conversational multi-turn dataset (*SpaCy*, *NLTK*)
 - Devised and implemented **weakly supervised transfer learning** experiments in Snorkel (*Python*)
- from* 10/2018 **TakeLab**, Research Intern, Zagreb.
to 04/2019
 - Implemented ML **domain adaptation** methods focused on **active learning** (*SKLearn*)
 - Analyzed & vastly improved the quality and performance of a large legacy codebase (*Python*)
 - Maintained a production-grade ML model: **serving, collection & storage** (*SQL*, *Django*, *React*)
- from* 07/2018 **Microsoft**, *Office 365*, Software Engineering Intern, Redmond.
to 10/2018
 - Architected & implemented back-end logic for a network topology builder service (*C#*, *Azure*)
 - Implemented bugfixes for an internal microservice framework (*C#*)
- from* 02/2018 **Freelance**, Software Engineer, Remote.
to 07/2018 Devised software solutions for a broad clientele in parallel with my university work, e.g.
 - Maintained a **payment processing** back-end (*NodeJS*),
 - Devised efficient **data transformation algorithms** for an ETL service (*Django*)
- from* 07/2017 **Google**, *Play*, Software Engineering Intern, London.
to 02/2018
 - Implemented new features on the Google Play back-end and Android client (*Java*)
 - Elicited the business needs of an open-ended WebAPK project in cross-team collaboration
 - Architected a web service PoC under constraints of Google's existing infrastructure (*Java*, *Go*)

Select projects

- MSc** Devised a **graph neural network** model for self-supervised language grounded representation learning and applied it to a downstream **reinforcement learning** task. (*PyTorch*)

- BSc** Research in **argumentation mining**; analyzed an online debate corpus, devised and evaluated an ML system for automated claim and stance classification. (*SKLearn, NLTK*)
- ETL** Devised core **data extraction and transformation algorithms**, and integrated them into a large existing codebase. (*Python, Docker*)
- QA** Implemented NN and traditional ML classifiers for question-answering. Co-authored a paper **published in proceedings of SemEval 2017**. (*Python, SKLearn*)
- ML/DL** Implemented **foundational ML and DL algorithms** from scratch in the SciPy stack. Analyzed behavior and pitfalls of various techniques. (*NumPy, SciPy, PyTorch*)
- RL** Reimplementation of *Plannable Approximations to MDP Homomorphisms*. Combines **representation learning and value iteration** in latent space. (*PyTorch*)
- Fake News** Researched and implemented existing **deep learning based** approaches for fake news detection. Implemented a custom Twitter crawler. (*SpaCy, Keras, Scrapy*)
- Lego** Devised and implemented an algorithm which parses 3D models from .obj files and converts them to Lego figure designs. (*Python*)
- 2D LinAI** Came up with and implemented auto-generating assignments testing foundational linear algebra knowledge for the *Interactive Computer Graphics* course. (*JavaScript, WebGL*)
- Bioinf** Researched and implemented a **MinHash-based method** for approximate mapping of long DNA strands to large reference databases. (*Java*)

Skills

- Languages Python, Java, JavaScript, C#, C++
- Tools & Misc Git, Linux, Vim; NumPy, SKLearn, PyTorch, Django, NodeJS, Spring