

Frank Ruis

DATA SCIENCE STUDENT AND ASSISTANT RESEARCHER AT UNIVERSITY OF TWENTE

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Education

University of Twente

Enschede, The Netherlands

MASTER OF SCIENCE

September 2019 - Present (8/10 avg.)

- Data Science & Technology

Relevant coursework includes: Complex Networks, Advanced Machine Learning, NLP, Big Data, Information Theory & Statistics, Time Series Analysis, Research in Information Retrieval, Spatial Statistics, Image Processing & Computer Vision

University of Twente

Enschede, The Netherlands

BACHELOR OF SCIENCE

2019

- Technical Computer Science

Relevant coursework includes: Algorithms & Data Structures, Linear Algebra II, Probability Theory, Calculus II, Statistics, Discrete Mathematics II, Data & Information, Artificial Intelligence, Compiler Construction, Networks, Operating Systems, Graph Theory

Experience

Hospital Group Twente & University of Twente [↗](#)

Enschede, The Netherlands

ASSISTANT AI RESEARCHER

2019 - Present

- Developed a method for accurate language-agnostic human-in-the-loop medication extraction from highly unstructured medical texts where conventional NLP methods failed.
- Implemented efficient large scale fuzzy string matching using a TF-IDF matrix and k-means clustering on character-level n-grams.

Elbuco [↗](#)

Zaltbommel, The Netherlands

FULL STACK DEVELOPER

2017 - Present

- Developed a modular Magento 2 web portal which was a deciding factor in the acquisition of at least 3 large B2B clients.
- Optimized checkout process for increased performance and conversion.
- Set up and managed AWS instances and services.

Windsurfing Association Hardboard [↗](#)

Enschede, The Netherlands

BOARD MEMBER (2016-2017), CHAIR OF WEBSITE COMMITTEE

2015 - 2019

- Analyzed database logs to substantiate a report about equipment needs netting the association 30% increase in university funding.
- Developed a semi-automated accounting system to keep track of all member expenses to reduce workload of treasurer.
- Lead the website committee in redeveloping all systems in Django.

Projects

- 2020 **Spatial Autocorrelation Regularization**, Implemented and tested a custom spatial autocorrelation regularization method applied to convolutional kernels of custom ResNet implementation.
- 2020 **MDLP Decision Tree Inference**, Implemented a decision tree using the minimum description length principle for inference and pruning.
- 2019 **Tetris RL**, Implemented a deep Q network with prioritized experience replay, trained to play Tetris with a heuristic reward function and the board pixels as input.
- 2019 **Recipe Popularity Prediction**, Trained Random Forest and node2vec models on network centrality measures to predict which of a set of two recipes is better with 90% accuracy, improving related work by 11%.
- 2018 **Graph Isomorphism**, Implementations of algorithms for efficiently calculating the number of automorphisms of a graph.

Languages & Skills

Languages **Fluent:** Python, PHP, Java **Proficient:** SQL, JavaScript, CSS **Prior knowledge:** R, MATLAB, Haskell, C

Skills Deep (Reinforcement) Learning, NLP, Hadoop, Spark, Slurm, AWS, TensorFlow, Keras, Pytorch, Git, Docker, Kubernetes