Martin Funkquist

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Summary

I am a PhD student in Artificial Intelligence at Linköping University in Sweden. Before starting my PhD I did an internship at TU Darmstadt within the domain of NLP. Prior to that I worked as a Software Engineer professionally for about 4 years.

My current research is in the intersection of planning and Reinforcement Learning. In addition to this, I am also interested in Artificial General Intelligence (AGI) and natural intelligence, including the more philosophical questions.

When I find some extra time I like to crank up the guitar and play a few solos. I am also a voracious reader that likes to explore a broad range of new topics.

I am always looking for new challenges and striving to improve a little every day.

Experience

Linköping University / PhD Student
OCTOBER 2022 – NOW, LINKÖPING

My current PhD research topic is to investigate whether we can use Deep Learning to learn how to *ground* quantified goals in the domain of classical AI planning. I will also look at how to incorporate *natural language* into the construction of goals for planners/solvers, to make these more accessible to the general public.

Technical University Darmstadt / Research Intern
APRIL 2022 – OCTOBER 2022, DARMSTADT

Worked as a research intern at the UKP Lab, in the area of Natural Language Processing (NLP). The research area was in scientific text summarization by trying to generate review papers in the NLP domain. From this I got good first hand experience doing research in Machine Learning and NLP.

Netlight AB / Software Engineer Consultant

SEPTEMBER 2019 – MARCH 2022, STOCKHOLM

Worked as a Software Engineering consultant in various projects, ranging from governmental agencies to media magnates. The work tasks varied from front-end development in JavaScript to back-end development in .NET and Python. In addition to pure software development, it included finding out and creating strategies for how to help the client in the best possible way.

Atiendo AB / Software Engineer
JUNE 2017 – AUGUST 2019, STOCKHOLM

Developed various web pages and applications. Visualization of interactive data using libraries like D3.js and worked on an AI system for predicting stock prices. I also developed web pages in pure HTML where JavaScript and jQuery was used. Tasks included maintenance of websites that were developed in ASP.NET.

Studybuddy AB / Studybuddy
SEPTEMBER 2016 - JANUARY 2017, STOCKHOLM

Helped high school students with their homework in mathematics and physics.

Education

Royal Institute of Technology / Master's degree in Computer Science
AUGUST 2017 - JUNE 2019, STOCKHOLM

Have studied courses such as: Artificial Intelligence, Advanced Algorithms and Information Visualization.

University of Zagreb / Exchange semester
OCTOBER 2018 - FEBRUARY 2019, ZAGREB

Exchange semester at the University of Zagreb in Croatia where I studied courses in computer science and graphic design, such as advanced databases, social networks and motion graphics.

Royal Institute of Technology / Bachelor's degree in Simulation Technology and Virtual Design
AUGUST 2013 - JUNE 2016, STOCKHOLM

Bachelor's orientation: Human-computer interaction. In addition to the basic courses for programs at KTH, I have studied courses such as computer graphics with interaction and statistics.

Other projects

FEVER 2021 Shared Task / Participant
MAY 2021 – AUGUST 2021

FEVER is a conference which focuses on Automated Fact Checking. The Shared Task consists of building a system for automatically verifying factual claims based on the information found on Wikipedia. The resulting system needs to be able to incorporate both tabular and textual

evidence. The results of my work can be seen at my GitHub repository.[1] The accompanying paper can be sent on request.

Nutrition Calculator / Creator and developer

DECEMBER 2019 – APRIL 2020

Nutrition Calculator is a website where you can view the nutritional content of food products. The data is sourced from the USDA. There is also support for creating personal recipes and seeing the nutritional content of these.

Publications

Learning to Ground Existentially Quantified Goals

2024

Here we study how to learn to ground existentially quantified goals in Classical Planning. This is an important problem as human instructions tend to result in quantified goals rather than grounded, but many planners do not support quantified goals.

CiteBench: A benchmark for Scientific Citation Text Generation

2022

In this paper we propose a new benchmark CiteBench for the task of *citation text generation*. The benchmark consists of four different datasets with varying task definitions and an standardized evaluation toolkit, to facilitate easy comparisons between proposed models to solve the task. We also propose a new qualitative way of evaluating the generated text.

Combining sentence and table evidence to predict veracity of factual claims using TaPaS and RoBERTa

2021

This paper describes a method for automatic fact-checking on the FEVEROUS dataset, that includes both textual and tabular evidence. The proposed model contains components for retrieving the most relevant information, to assess the veracity of a claim, and a NLI model to infer the correct label of a claim.

Study of the impact and usage of an audience engagement tool at live events

2019

This paper describes the data gathering and evaluation process for determining the usability of an audience engagement application. For the data gathering a feedback module of the application was developed, which was used during two events, one in a laboratory setting and the other in a real world setting.

Simulating Group Formations Using RVO

2016

This paper describes the study of artificial agents in a group formation setting. The goal of the research was to make realistic simulations over pedestrian artificial agents.

[1] https://github.com/Martin36/FEVER2021_SharedTask

Programming languages and tools

- Python
- PyTorch
- TensorFlow
- Keras
- NLTK
- scikit-learn
- SQL
- JavaScript
- React