Ivica Kostric

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Citizenship: Croatian

Research interests

Conversational Search, Conversational Recommender Systems,
Information Retrieval, Natural Language Processing

Education

Jul 2021 – Present	**University of Stavanger** – Stavanger, Norway PhD Fellowship in Conversational AI Supervisor: Prof. Krisztian Balog
2019 – 2021	**University of Stavanger** – Stavanger, Norway Degree: Master of Science Programme: Master's Degree Programme in Applied Data Science Mentors: Prof. Krisztian Balog, Dr. Filip Radlinski (Google)
2018 – 2019	**University of Stavanger** – Stavanger, Norway Degree: Bachelor of Engineering Programme: Bachelor's Degree Program in Control Engineering and Circuit Design Programme option: Automation and Electronics Design Mentor: Prof. Trygve Eftestøl

Publications

2024	**IAI MovieBot 2.0: An Enhanced Research Platform with Trainable Neural Components and Transparent User Modeling** Nolwenn Bernard*, Ivica Kostric*, Krisztian Balog (* equal contribution) *Just Accepted, WSDM '24*
2023	**Generating Usage-related Questions for Preference Elicitation in Conversational Recommender Systems** Ivica Kostric, Krisztian Balog, Filip Radlinski *ACM Transactions on Recommender Systems*

2022	**The University of Stavanger (IAI) at the TREC 2022 conversational assistance track**
	Weronika Lajewska, Nolwenn Bernard, Ivica Kostric, Ivan Sekulic, Krisztian Balog
	The Thirtieth Text REtrieval Conference Proceedings, TREC 22

2022	**DAGFiNN: A Conversational Conference Assistant**
	Ivica Kostric, Krisztian Balog, Tølløv Alexander Aresvik, Nolwenn Bernard, Eyvinn Thu Dørheim, Pholit Hantula, Sander Havn-Sørensen, Rune Henriksen, Hengameh Hosseini, Ekaterina Khlybova, Weronika Lajewska, Sindre Ekrheim Mosand, Narmin Orujova
	Proceedings of the 16th ACM Conference on Recommender Systems (RecSys '22), pp. 628–631, 2022.

2021	**The University of Stavanger (IAI) at the TREC 2021 conversational assistance track**
	Ivica Kostric, Krisztian Balog, Magnus Book, Trond Linjordet, Vinay Setty
	The Thirtieth Text REtrieval Conference Proceedings, TREC 21

2021	**Soliciting User Preferences in Conversational Recommender Systems via Usage-related Questions**
	Ivica Kostric, Krisztian Balog, Filip Radlinski
	Fifteenth ACM Conference on Recommender Systems (RecSys '21), pp. 724–729, 2021.

Research experience

Spring 2023   **IAI MovieBot v2.0 (University of Stavanger)**

Led the enhancement of the IAI MovieBot, focusing on integrating advanced neural components for natural language understanding and dialogue policy. The project aimed to develop a robust platform for user research, featuring transparent user preference modeling, improved user interface, and upgraded research infrastructure. The work was accepted for presentation at WSDM'24.

Summer 2022   **TREC CAsT 2022 participation** (University of Stavanger)

Contributed to the participation of the IAI group at Text REtrieval Conference Conversational Assistance Track (TREC CAsT), with the goal of increasing performance over a strong baseline in conversational search.

Spring 2022   **DAGFiNN: A Conversational Conference Assistant** (University of Stavanger)

Supervised a team of Master's and Bachelor's students with the goal of building a multi-modal, multi-domain conversational recommender system. The system was showcased at ECIR'22 where it received positive feedback, and the research led to publication at RecSys'22.

Summer 2021 **TREC CAsT 2021 participation** (University of Stavanger)
Led the participation of the IAI group at Text REtrieval Conference Conversational Assistance Track (TREC CAsT), with the goal of developing a strong baseline system, which can serve as a basis for future research on conversational search.

Spring 2021 **Master's thesis** (University of Stavanger)
Conducted research on preference elicitation in conversational recommender systems by asking implicit questions based on item usage. Utilized multi-staged data annotation protocol using crowdsourcing to gather a high-quality dataset which was used to train a sequence-to-sequence neural model. This project led to publication at RecSys'21 with a journal extension currently in the making.

Fall 2020 **Neural IAI MovieBot**
Used state-of-the-art deep learning approaches for natural language understanding and intent detection to further develop the IAI MovieBot conversational movie recommender system. Other tasks involved making the system more modular and building documentation using Sphinx.

Teaching experience

Fall 2022 **Lecturer, DAT640: Information retrieval and text mining (University of Stavanger)**
Responsible for creating and presenting lecture material, guiding students through assignments and group project work, and creating and evaluating the final exam. Topics include search engine architecture, text pre-processing and indexing, retrieval models and evaluation, web search, semantic search, text clustering and categorization.

Fall 2021 **Teaching assistant, DAT640: Information retrieval and text mining (University of Stavanger)**
Responsible for creating, guiding students to complete, and evaluating graded assignments and group project work. Developed a framework for automated evaluation using Pytest.

Spring 2019 - **Teaching assistant, ELE520: Machine learning (University of Stavanger)**
present Responsible for helping students solve theoretical and practical graded assignments, and evaluating assignment submissions. Topics include Bayes decision theory, estimating the statistical functions using parametric and non-parametric methods, linear discriminant functions, iterative gradient descent, neural networks, clustering.

Fall 2021	**Teaching assistant, MOD510: Modeling and Computational Engineering (University of Stavanger)**
	Responsible for helping students solve theoretical and practical graded assignments, and evaluating assignment submissions. Topics include numerical derivation and integration, Monte Carlo and bootstrapping, numerically solving differential equations, simulated annealing, lattice Boltzmann, random walk, and compartment models.

Industry experience

June 2020 - Jul 2021 (Part-time)	**Presight Solutions (Data Analyst)** – Stavanger, Norway
	Responsible for research and development of a predictive model within offshore safety using machine learning algorithms. This entailed cleaning and processing raw data, training and evaluating several models, and working with the development team to integrate the model into the main application.

Sep 2018 - June 2020 (Part-time)	**Presight Solutions (Software Engineer)** – Stavanger, Norway
	The tasks in this position included software R&D, maintenance, further development of existing products, and development of new solutions. The obligations often extended to other parts of the full life cycle of software development.

Summer 2018	**Presight Solutions (R&D Intern)** – Stavanger, Norway
	Responsible for creating a miniature (LEGO) model of a city which contains a variety of hidden sensors and a wireless micro-controller (ESP8266) programmed in Python to send sensor updates to the company's main application. This was showcased at Nordic Edge Expo and Conference 2018 in Stavanger with the theme Smart City.

Additional courses

Spring 2017	**Introduction to Computational Thinking and Data Science**
Spring 2017	**Computational Probability and Inference**
Spring 2017	**Learning from Data (Machine Learning)**
	Courses taken on edX from Caltech and MIT

Technical skills

Programming languages
Proficient in: Python, Javascript, C#, VB.NET, HTML, CSS
Familiar with: R, Matlab, Shell script

Software

Visual Studio Code, Git, LaTeX

Languages

Croatian (native), English (fluent), Norwegian (advanced)

Other interests

Boardsports when the weather allows and board games when it does not.