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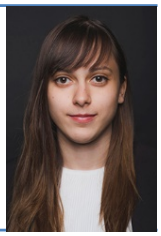

Professional Skills and Projects in Computer Science

Multi-Step Critiquing User Interface for Recommender Systems – EPFL - 2021

Published at the 15th ACM Conference on Recommender Systems (RecSys 2021). The main goal of the research was to provide user-friendly recommendation interfaces based on personalized explanations and critiquing. The implemented system was model-agnostic (for both recommender systems and critiquing models) allowing a great flexibility and further extensions. These interfaces allowed to test such recommendation systems on a real use case and also to highlight some limitations of these approaches to find solutions to overcome them. A human evaluation is underway and will be submitted to the ACM Transactions on Interactive Intelligent Systems Journal - Special Issue on Human-centered, Explainable AI.

Ad-hoc governmental dataset search using similarity and unsupervised/supervised classification of documents – National Institute of Informatics (NII) Tokyo - 2020

The main goal was to study the capacity of the standard information retrieval techniques on data set search using governmental data. The research focused on text documents in various formats and on contextual search for information using metadata issued by US government organizations and headers in tabular resources. Some suitable ways to compare such data with each other or with queries were proposed. Part of this work was presented at the 15th NTCIR Conference on Evaluation of Information Access Technologies (Tokyo, Japan).

Towards Automatic Design of Controllers: Implementation of Machine-Learnable, Cooperative Behaviors for Khepera IV Robots – EPFL - 2019

Choosing flocking as case study, complex controllers were obtained by combining fundamental behaviors and by using a probabilistic finite state machine as behavioral arbitrator. No absolute reference system but only local information based on infrared sensors for range and bearing was used. The design and implementation of an extended Kalman Filter and an explicit cooperative mechanism in the form of communication among the robots improved the flocking and made it more stable and noise-resistant. For more information: DISAL_summary.

Lottery scheduling – EPFL - 2018

Conception and implementation of a new scheduling policy for Linux Kernel. Created an efficient algorithm with an augmented Red-black tree to store the tasks of the system. Pros of this solution: less complex and provided a good approximation of the CFS scheduler; elegant solution for the priority representation; no overflow problems.

Distant Supervision for Detecting Hate Speech – EPFL - 2017

The goal of this project was to find and implement a scalable methodology to identify hate speech in the tweets based on the hashtags they contained. A particular attention was paid to performance. This project was started from scratch so the work carried out allowed to highlight some important aspects for the next stage of the research.

Proficient in **Python**, **GO**, **Java**, **Scala**, **C, C++** and **JavaScript**, **CSS**, **HTML**.

Good understanding of the concepts of **object oriented programming**, **functional programming**, **parallelism and concurrency, distributed and decentralized systems**.

Other keywords: Artificial Intelligence, Machine Learning, Recommender Systems, Explainable AI, Data Analysis, Dataset Search, Information Retrieval, NLP, TensorFlow, Kafka, Database Systems, Spark, Networking, Software Engineering, Operating Systems, REST API.

Publications

- Diana Andreea Petrescu, Diego Antognini, and Boi Faltings. 2021. Multi-Step Critiquing User Interface for Recommender Systems. In Fifteenth ACM Conference on Recommender Systems (Amsterdam, Netherlands) (RecSys'21).
- Phuc Hua Gia Nguyen et al. 2020. NII Table Linker at the NTCIR-15 Data Search Task: Re-ranking with Pre-trained Contextualized Embeddings, Data Content, Entity-centric, and Cluster-based Approaches. Proceedings of the 15th NTCIR Conference on Evaluation of Information Access Technologies (Tokyo, Japan) (NTCIR-15).

Education and Certificates

2020	**Master of Science in Computer Science**, Swiss Federal Institute of Technology (EPFL) – Software Systems Specialization
2020	**Master Thesis in Computer Science**, National Institute of Informatics (NII), Tokyo
2017	**Bachelor of Science in Computer Science**, Swiss Federal Institute of Technology
2014	**Swiss Maturity Certificate with bilingual mention** (German-French), Swiss Confederation and Canton of Vaud

	Exchange year in Schaffhausen
2014	**Scientific Baccalaureate**, Canton of Vaud Main option: "Physics and Mathematics Application" Complementary option: "Chemistry" Baccalaureate project: "Kegelschnitte und Java"
2014	**Certificate in Advanced English**, Council of Europe level C1, Cambridge English, University of Cambridge
2011	**Upper Secondary Certificate** Main option: "Physics and Mathematics Application" Won the “Physics and Mathematics Application Award”

Student Jobs and Interests

Teaching Assistant for the **Operating Systems Laboratory** – EPFL and for the **Department of Information Systems** – University of Lausanne - 2018

Tasks: students’ supervision and coaching for “Operating Systems” and “Algorithms and Computational Thinking” courses.

Hackathons - START Hack 2019 – St.Gallen and **LauzHack** 2018 – EPFL

Tasks: START Hack - Developed an IOS app to enable deaf people to communicate with hearing people (two-way communication: sign language recognition and voice translation to sign language) and LauzHack - Developed an ML app that allows the user to take a picture of some ingredients and suggest a recipe that makes use of them.

Agepoly (General Student’s Association) Polyquity Commission – EPFL – 2017-2019

Tasks: Founder and Committee Member – Awareness Manager (manage a team, organize conferences and workshops, relay information, etc.).

Travels

Asia (Japan, South Korea, Singapore, Indonesia, Thailand, Vietnam); America (Canada, USA, Cuba); Middle East (UAE); Europe (Germany, England, Holland, etc.)

Sports and Hobbies

Dancing, Nature, Hiking, Running, Snowboarding, Basketball, Tennis, Karate, Piano, Photo and Video making, etc.

Languages

French (mother tongue), English (C1 level certificated), German (bilingual Swiss Maturity German-French certificated), Romanian (fluent)