Negin Ghasemi

PhD Candidate at Radboud University

Contact Information

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Research and Work Experiences

2020–Present **Phd Candidate:** Informagus, Radboud University

Working on four major projects focused on modern scenarios in federated search systems.

- Modifying and analyzing various transformer-based rankers such as BERT and T5.
- Developing an app selection system using the ability of transformer-based rankers to model resources and reduce retrieval bias.
- Designing a federated recommender system using neural rankers.
- Designing a cross-market question-answering system.

2016–2020 **Researcher:** NLP Lab, Amirkabir University of Technology (Tehran Polytechnic)

Completed three major projects on state-of-the-art IR and NLP fields.

- Implemented different kinds of document representations, using both pre-trained models and deep neural networks such as LSTM, and GAN.
- Improved a collaborative recommender system about 15% by using different user profiling.
- Led development of an expert finding system, enhanced it by using graph embeddings and text representation profiling.
- Analyzing results and writing reports on all projects, and publish journal papers

2017–2020 **Back-End Developer:** Adanic Co.

- Helped build and enhance highly available, scalable, real-time and secure channel manager system for banking transactions using **Java Spring**, **MySQL**, and **MongoDB**
- Lead development of an analytical dashboard for banking transactions using **Elastic Search**, **Logstash**, and **Kibana**
- Aided in training of new developers, and support engineers throughout the product lifecycle to produce high-quality software
- Maintained systems for 6 different clients using various databases and environments

2016 **Intern:** AtiNegar Co.

- Implemented a portfolio management system using **Python** for statistical analysis and *Efficient Frontier* algorithm

Publications

2022 **Negin Ghasemi**, Mohammad Aliannejadi, Hamed Bonab, Evangelos Kanoulas, James Allan, and Djoerd Hiemstra, "Cross-Market Question Answering". Under Review, August 2022.

2021 **Negin Ghasemi**, Mohammad Aliannejadi, and Djoerd Hiemstra, "BERT for Target Apps Selection: Analyzing the Diversity and Performance of BERT in Unified Mobile Search". Arxiv preprint, abs/2109.06306, September 2021.

2021 **Negin Ghasemi**, and Djoerd Hiemstra, "BERT meets Cranfield: Uncovering the Properties of Full Ranking on Fully Labeled Data". In Proceedings of the 16th Conference of the EACL: Student Research Workshop, pages 58–64, Online, April 2021.

2021 **Negin Ghasemi**, Ramin Fatourechi, and Saeedeh Momtazi, "User Embedding for Expert Finding in Community Question Answering". ACM Transactions on Knowledge Discovery from Data, 15(4), March.

2021 **Negin Ghasemi**, and Saeedeh Momtazi, "Neural Text Similarity of User Reviews for Improving Collaborative Filtering Recommender Systems". Electronic Commerce Research and Applications, 45:10101.

2018 **Negin Ghasemi**, and Saeedeh Momtazi, "Improving Collaborative Filtering Recommender Systems with New User Similarity Model", In Proceedings of the 23rd Conference of Computer Society of Iran (CSICC 2018), 2018 (In Persian).

Education

2020–2024 **Doctor of Philosophy, Computing and Information Science (Data Science):**
Radboud University

- **PhD Project**: Transfer Learning for Federated Search
- **Promoter**: Prof. dr. Djoerd Hiemstra, and Prof. dr. Arjen de Vries

2017–2019 **Master of Science, Computer Engineering (Artificial Intelligence):**
Amirkabir University of Technology (Tehran Polytechnic)

- **Overall GPA**: 18.03/20
- **Thesis Title**: Expert Finding in Community Question-Answering
- **Supervisor**: Dr. Saeedeh Momtazi

2013–2017 **Bachelor of Science, Computer Engineering (Software Engineering):**
Amirkabir University of Technology (Tehran Polytechnic)

- **Overall GPA**: 17.13/20
- **Selected GPA**: 18.74/20 (Principles of Database Design, Information Storage and Retrieval, Data Structures and Algorithms, Design of Algorithms, Operation Systems, Stochastic Processes)
- **Bachelor Project**: Improving Collaborative Filtering Recommender Systems with New User Similarity Model

Technical Skills

Languages

Experienced Python, Java, R, Matlab, C/C++

Deep Learning Frameworks

Experienced PyTorch, Keras, TensorFlow

Platforms and Databases

Experienced MTurk, Slurm, MongoDB, PostgreSQL, Elasticsearch

Familiar with AWS, Lucene, Lemur, RapidMiner, Weka, Spark

Miscellaneous

Experienced Linux, GIT, LaTeX

Teaching and Supervision Experience

Spring 2021 **Student Supervision: MSc Project**
Maurice Verbrugge,The BERT Ranking Paradigm: Training Strategies Evaluated

Fall 2021 **Graduate Teaching Assistant:** Information Retrieval
Instructed by Dr. Faegheh Hasibi, and Dr. Harrie Oosterhuis

Spring 2022 **Graduate Teaching Assistant:** Machine Learning in Practice
Instructed by Prof. dr. Elena Marchiori

Fall 2020 **Graduate Teaching Assistant:** Information Retrieval
Instructed by Dr. Faegheh Hasibi

Spring 2019 **Graduate Teaching Assistant:** Principles of Database Design
Instructed by Dr. Saeedeh Momtazi

Spring 2019 **Lab Instructor:** Operating Systems Lab

Fall 2018 **Graduate Teaching Assistant:** Artificial Intelligence
Instructed by Dr. Ahmad Nickabadi

Spring 2018 **Lab Instructor:** Database Design Lab

Fall 2017 **Graduate Teaching Assistant:** Principles of Database Design
Instructed by Dr. Maryam Amir Haeri

Spring 2017 **Teaching Assistant:** Principles of Database Design
Instructed by Dr. Saeedeh Momtazi

Fall 2017 **Graduate Teaching Assistant:** Logic Circuits
Instructed by Prof. Morteza Saheb Zamani, Dr. Mehdi Sedighi, and Dr. Masoud Sabaei

Fall 2016 **Grader:** Logic Circuits
Instructed by Dr. Mehdi Sedighi, and Dr. Mahmoud Momtazpour

Fall 2015 **Grader:** Logic Circuits
Instructed by Prof. Morteza Saheb Zamani, and Dr. Mehdi Sedighi

2014–2017 **Mathematics Teacher** Salam Highschool
I taught Differential Equations and Discrete Mathematics

Notable Academic Coursework Projects

Python **Statistical Natural Language Processing:**
- Implementation of Information Gain, Mutual Information and chi-square algorithms
- Implementation of a system for Named-entity Recognition, POS Tagging
- Implementation of a Sentiment Analysis Algorithm

Advanced Topics in Information Retrieval and Web Search:
- Implementation of a large text file retrieval system using Apache Lucene
- Implementation of a language model based system for retrieving most descriptive words
- Implementation of a Recommender System based on user similarity

Neural Networks:
- Implementation of an autoencoder using Keras
- Implementation of a LSTM network using tensorflow for peom generation

Big Data Analysis:
- Implementation of SOSTREAM algorithm for data stream clustering

Artificial Intelligence:

Implementation of an intelligent agent in Pacman AI competition

R **Data Mining:**

Implementation of a fraud detection system

Implementation of a community detection system

Implementation of an outlier detection system

Matlab **Principles of Simulation:**

Implementation of a complex manufacturing factory

Activities and Awards

2022 Student Volunteer at 2022 SIGIR Conference, Madrid

2019 Reviewer in Program Committee at 2019 ACL Student Research Workshop

2017 Awarded admission to MSc studies without being required to take the National Universities Entrance Exam.

2017 Awarded as an Outstanding Student in Amirkabir University of Technology, Tehran, Iran.

References

Available Upon Request