

# Negin Ghasemi

*PhD Student at Radboud University*

## Contact Information

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## 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
- 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
- 2009–2013 **Diploma in Physics and Mathematics Discipline:** Salam High school, Tehran

## Research Interests

Information Retrieval, Federated Search, Conversational Search  
Natural Language Processing, Semantic Textual Similarity  
Recommender Systems, Expert Finding, Question-Answering Systems, Deep Learning

## Publications

- 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](https://arxiv.org/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 Fatourehchi, 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).

## Research and Work Experiences

- 2020–Present **Phd Candidate:** Informagus, Radboud University
- Modifying and analyzing various transformer-based document 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 search engine using neural rankers.
  - Designing a review-based 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

## Teaching 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 2021 **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

## Technical Skills

### Languages

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

### Deep Learning Frameworks

Experienced Keras, TensorFlow

### Technologies and Platforms

Experienced MongoDB, PostgreSQL, Elasticsearch

Familiar with Lucene, Lemur, RapidMiner, Weka, Spark

### Miscellaneous

Experienced Linux, GIT,  $\text{\LaTeX}$

## 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 poem 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

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## Activities and Awards

- 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.

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## References

Available Upon Request