

# Mohanna Hoveyda

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I am a third-year PhD candidate at Radboud University, specializing in *Conversational AI*. My research interests encompass: **1)** Employing neuro-symbolic solutions for **reasoning** with language models, and **2)** Developing reinforcement learning-based **orchestration** frameworks that adaptively select and configure building blocks (agents, tools, and models) in modular information access systems, based per user inputs.

## EDUCATION

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- PhD, Radboud University, iCIS** Nijmegen, Netherlands  
Knowledge-Enriched Conversational AI  
February 2023  
**Advisors:** Arjen P. de Vries, Faegheh Hasibi, Maarten de Rijke
- MSc, University of Tehran, FNST** Tehran, Iran  
Computational Linguistics  
September 2020–January 2023
- Bachelor, University of Tehran, ECE & FFL** Tehran, Iran  
Computer Engineering (Minor) 2018–2020  
French Language and Literature (Major) 2016–2020
- Highschool, National Organization for Development of Exceptional Talents (NODET)** Karaj, Iran  
Mathematics and Physics 2012–2016

## RESEARCH

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- Adaptive Orchestration of Modular Generative Information Access Systems** SIGIR 2025  
Co-Authors: Harrie Oosterhuis, Arjen P. de Vries, Maarten de Rijke, Faegheh Hasibi
- Proposed a self-organizing GenIA architecture enabling real-time adaptive orchestration of LLM agents, retrieval models, and external tools per query to maximize relevance and minimize computational overhead.
  - Developed a dynamic QA system that adaptively selects optimal answering strategies based on question complexity, using *contextual multi-armed bandits*.
- Real-World Conversational Entity Linking Requires More Than Zero-Shots** ACL 2024 Findings  
Co-Authors: Arjen P. de Vries, Faegheh Hasibi, Maarten de Rijke
- Introduced benchmark and evaluation scenarios for more realistic assessment of entity linking models
- Network Science-Based Structural Analysis of Semantic Representations** Master's Thesis  
Supervisors: Mostafa Salehi, Mahmood Bijankhan, Paulino Villas-Boas
- Applied network science metrics to analyze and compare machine-learned and human-curated semantic spaces across both uni-modal and multi-modal representations
  - Developed a novel statistical method that enables comparing networks of varying sizes

## EXPERIENCE

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- Teaching Assistant**, Information Retrieval 2023 - 2024  
Radboud University, Nijmegen, Netherlands
- Teaching Assistant**, Machine Learning for Natural Language Processing 2022  
University of Tehran, Tehran, Iran

## WORKSHOPS AND SCHOOLS

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- The European Summer School on Information Retrieval (ESSIR)**  
Amsterdam, Netherlands, University of Amsterdam July 2024  
Vienna, Austria, Technische Universität Wien August 2023
- High-Performance Computing (HPC) and Deep Learning Workshop** August 2022  
Tehran, Iran, HPC Laboratory, Institute for Research in Fundamental Sciences (IPM)

**Summer School of Intelligent Learning***July 2019–August 2019*

Tehran, Iran, Institute for Research in Fundamental Sciences (IPM) and Sharif University of Technology

**Autumn School of Mind and Brain***November 2018*

Tehran, Iran, Cognitive Sciences and Technologies Council and The University of Tehran

**AWARDS AND SCHOLARSHIPS**

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**Ranked 6th in Computational Linguistics National Master's Entrance Exam**

August 2020

Iran National Organization for Educational Testing

**Scholarship for Computational Linguistics Master's Program**

August 2020

Tehran, Iran, University of Tehran

**2nd Prize for The Best Actress in The 4th Student Festival of Francophone Theater**

May 2019

Tehran, Iran, Iranian Association of French Literature and Language (AILLF)

**Scholarship for Bachelor of French Literature**

August 2016

Tehran, Iran, University of Tehran

**SKILLS**

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**Languages:** Persian (Native), English (Fluent), French (Intermediate), Dutch (Basic)**Programming:** Python (Advanced), C (Intermediate), C++ (Intermediate), HTML (Basic), CSS (Basic)**Frameworks & Other Computing Skills:** Natural Language Processing (NLTK, SPACY, Gensim, Huggingface, Flair), Deep Learning (PyTorch, Tensorflow, Scikit-learn), Others (Networkx, Numpy, Seaborn), Praat**REFERENCES**

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**Arjen P. de Vries**[a.devries@cs.ru.nl](mailto:a.devries@cs.ru.nl)

Professor of Information Retrieval at Radboud University and Research Director of iCIS

**Maarten de Rijke**[m.derijke@uva.nl](mailto:m.derijke@uva.nl)

Professor of Artificial Intelligence and Information Retrieval at the University of Amsterdam