Alireza Salemi

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Education

University of Massachusetts Amherst   *Massachusetts, USA*

MSc/PhD in Computer Science   *Sep. '22 - Current*

- **Courses:** Information Retrieval, Computer Vision, Adv. Natural Language Processing, Neural Networks, Adv. Information Assurance, Adv. Algorithms
- GPA: 3.833/4.0

University of Tehran   *Tehran, Iran*

BSc in Computer Engineering   *Sep. '17 - Feb. '22*

- Ranked 1st among 103 Computer Engineering students
- GPA: 19.60/20 (4/4)

Interests

Natural Language Processing   Text Generation, Visual Question Answering, Personalization, Retrieval-Augmented Generation.

Neural Information Retrieval   Multi-modal Retrieval, Retrieval-Enhanced Machine Learning, Dense Retrieval.

Publications

Optimization Methods for Personalizing Large Language Models through Retrieval Augmentation   *SIGIR '24*

Alireza Salemi, Surya Kallumadi, Hamed Zamani

Towards a Search Engine for Machines: Unified Ranking for Multiple Retrieval-Augmented Large Language Models   *SIGIR '24*

Alireza Salemi, Hamed Zamani

Evaluating Retrieval Quality in Retrieval-Augmented Generation   *SIGIR '24*

Alireza Salemi, Hamed Zamani

Accelerated Retrieval-Augmented Language Models   *Under Review*

Derrick Quinn, John Salihu, Mohammad Nouri, Neel Patel, *Alireza Salemi*, Hamed Zamani, Mohammad Alian

LaMP: When Large Language Models Meet Personalization   *Under Review*

Alireza Salemi, Sheshera Mysore, Michael Bendersky, Hamed Zamani

Retrieval-Enhanced Machine Learning: Synthesis and Opportunities   *Under Preparation*

Fernando Diaz, Andrew Drozdov, To Eun Kim, *Alireza Salemi*, Hamed Zamani

Pre-Training Multi-Modal Dense Retrievers for Outside-Knowledge Visual Question Answering   *ICTIR '23*

Alireza Salemi, Mahta Rafiee, Hamed Zamani

A Symmetric Dual Encoding Dense Retrieval Framework for Knowledge-Intensive Visual Question Answering   *SIGIR '23*

Alireza Salemi, Juan Altmayer Pizzorno, Hamed Zamani   *Best Student Paper*

PEACH: Pre-Training Sequence-to-Sequence Multilingual Models for Translation with Semi-Supervised Pseudo-Parallel Document Generation   *LoResMT @ EACL '23*

Alireza Salemi, Amirhossein Abaskohi, Sara Tavakoli, Yadollah Yaghoobzadeh and Azadeh Shakery

ARMAN: Pre-training with Semantically Selecting and Reordering of Sentences for Persian Abstractive Summarization

Alireza Salemi, Emad Kebriaei, Ghazal Neisi Minaei and Azadeh Shakery

EMNLP '21

UTNLP at SemEval-2021 Task 5: A Comparative Analysis of Toxic Span Detection using Attention-based, Named Entity Recognition, and Ensemble Models

Alireza Salemi, Nazanin Sabri, Emad Kebriaei, Behnam Bahrak and Azadeh Shakery

SemEval @ ACL '21

Research Experience

Student Researcher at Google Research
Under supervision of Cheng Li and Mingyang Zhang
- Working on Personalizing Large Language Models.

Google Research
Jun. '24 - May '25

Research Assistant at the Center for Intelligent Information Retrieval
Under supervision of Hamed Zamani
- Working on Retrieval Enhanced Machine Learning.
- Working on Multi-modal Knowledge-intensive Tasks.
- Working on Personalizing Large Language Models.

UMass Amherst
Sep. '22 - Current

Research Assistant at Information Retrieval Labratory
Under supervision of Azadeh Shakery and Yadollah Yaghoobzadeh
- Working on designing a pre-training objective for multi-lingual language models.
- Working on designing a pre-training objective for a summarization language model.

University of Tehran
Jan. '21 - Sep. '22

Research Assistant at Data Analysis Laboratory
Under supervision of Azadeh Shakery and Behnam Bahrak
- Working on designing a system for annotating toxic (hate speech) spans of a piece of text.

University of Tehran
Aug. '20 - Feb. '21

Work Experience

Google Research
Student Researcher
- Working on personalizing large language models.

Remote, USA
Jun. '24 - May '25

Lowe's
Data Science Intern
- Working on personalizing retrieval systems and large language models using reinforcement learning by learning from large language model's feedback as a signal for training the retriever.

North Carolina, USA
May '23 - Aug. '23

Sotoon
Natural Language Processing Data Scientist
- Working on an AutoML system for text classification, with a focus on sentiment analysis of customer's reviews and automatically accept/rejection of comments.

Tehran, Iran
Nov. '21 - Aug. '22

Achievements

'23   **The Best Student Paper Award @ SIGIR 2023,** The award is given to the best paper mainly written by a student. *UMass Amherst*

'23   **W. Bruce Croft Scholarship,** The scholarship is given to students whose research area is about information retrieval and natural language processing. *UMass Amherst*

'22   **UMass Amherst CICS Scholarship,** The scholarship is given to some selected entering graduate students based on their application's merit. *UMass Amherst*

'21   **Best Thesis Award in Computer Engineering,** BSc thesis was selected as the best thesis in the computer engineering department. *University of Tehran*

'18-'20   **University of Tehran Sponsors Foundation Top Student,** This award is given to the top student at the computer engineering department. *University of Tehran*

'17-'20   **University of Tehran Scholarship,** This scholarship is given to exceptional talents from the UT Sponsors Foundation. *University of Tehran*

'18-'19   **F.O.E (Faculty of Engineering) Award,** The award is given to the top student among all of 103 Computer Engineering students. *University of Tehran*

Teaching Experience

'20-'21	**Artificial Intelligence**, Head TA, Under supervision of Yadollah Yaghoobzadeh and Hakimeh Fadaei.	*University of Tehran*
'20-'21	**Programming Languages and Compiler Design**, Head TA, Under supervision of Fatemeh Ghassemi.	*University of Tehran*
'20-'21	**The Theory of Formal Languages and Automata**, TA, Under supervision of Hossein Hojjat.	*University of Tehran*
'20	**Database Design**, TA, Under supervision of Azadeh Shakery.	*University of Tehran*
'20	**Design and Analysis of Algorithms**, TA, Under supervision of Hamid Mahini.	*University of Tehran*
'19	**Engineering Mathematics**, TA, Under supervision of Mahdi Tale Masouleh.	*University of Tehran*

Invited Talks

Dec. '23	**Knowledge-Intensive VQA**, Talk about Knowledge-Intensive Visual Question Answering.	*QIAU*
Oct. '23	**When Large Language Models Meet Personalization**, Talk about LaMP benchmark and personalizing LLMs.	*UMass ML Club*
May '23	**When Large Language Models Meet Personalization**, Talk about LaMP benchmark and personalizing LLMs.	*Google Research*

Professional Services

ACL'24	Reviewer for The 62nd Annual Meeting of the Association for Computational Linguistics.
SIGIR'24	PC Member for The 47'th International ACM SIGIR Conference on Research and Development in Information Retrieval.
LLM-IGS'24	PC Member for The 1st and 2nd Workshop on Large Language Models for Individuals, Groups, and Society.
IMP'24	Mentoring MS Students in Industry Mentorship Program at UMass Amherst working on Personalizing LLMs in collaboration with industry mentors from Adobe.
ERSP'23-'24	Mentoring Undergrad Students in Early Research Scholar Program at UMass Amherst working on a research project about Unified Question Answering.
TOIS	Reviewer for ACM Transactions on Information Systems.
TKDE	Reviewer for IEEE Transactions on Knowledge and Data Engineering,

Languages

English	Fluent (TOEFL score: 113/120, Reading: 30, Listening: 28, Speaking: 26, Writing: 29)
Persian	Native proficiency
Arabic	Familiar