

# Ali Elahi

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## Summary

**Seeking Roles:** Data Science, Machine Learning Engineer, NLP Engineer

- Dynamic, social, and analytical professional with strong foundation in **data science**. Currently a research assistant and pursuing PhD in Computer Science from the University of Illinois (Chicago).
- Proficient in cutting-edge techniques, **data mining**, **big data**, and **natural language processing**. Equipped with a robust foundation in **machine learning**, coupled with hands-on experience in developing innovative solutions.
- Committed to personal and professional growth and passionate about becoming a **leader**. I aspire to work on a variety of responsibilities, challenge myself, expand my knowledge and skills, and seek the opportunity to **interact** and **collaborate** with large numbers of people.

## Skills

**Languages:** Python, Java, R, C++, SQL, LaTeX

**Machine Learning Frameworks:** Scikit-learn, Keras, TensorFlow, PyTorch

**Data Analysis & Visualization:** Pandas, NumPy, SciPy, Matplotlib, Seaborn

**Natural Language Processing:** NLTK, Hugging Face, Weights & Biases

**Development & Deployment:** Kubernetes, Docker, Apache Spark, Apache Airflow, Databricks

**Software:** Linux, Git, Microsoft Office (Word, Excel)

## Work Experience

**Computer Science Department, UIC**

Aug 2024 - Present

**Teaching Assistant**

- Teaching **Data Structures** course.

**Information Retrieval Lab, UIC**

Sep 2022 - Present

**Research Assistant**

- Focused on **Retrieval Augmented Generation (RAG)** and **Knowledge Graphs (KG)** for **fine-tuning** and prompting **large language models** for Investment and **finance**.
- **Extractive summarization** of news articles and mining 10-K filing in order to **few-shot training** of LLMs to give investing advise!
- **Previous Project:** Developing and testing **domain adaptation** algorithms (co-training, feature augmentation, balance weighting) for **transfer learning**. Predicting water quality and bacteria levels in data-scares locations by transferring information from data-rich locations.

**YektaNet, Tehran, Iran**

2021 - 2022

**Data Scientist / Business Analyst**

- Focused on designing a bidding system for advertisements; auction theory and mechanism design for **profit maximization** through advertisements.

**University of Tehran, Tehran, Iran**

2020 - 2021

**Research Assistant**

- Focused on evaluation (Online/Offline A/B-testing, and permutation tests) of **recommendation algorithms**; content-, collaborative filtering-, trend- based recommendation algorithms.
- Training and valuation of a language model on 50Gb corpus for **content-based recommender system**.

## Awards and Certificates

- **Silver Medal in National Chemistry Olympiad**
- **Iran's Elite Foundation Grant**

## Education

**University of Illinois Chicago**

***PhD in Computer Science***

**Thesis:**

**Advisor:** Prof. Cornelia Caragea

**Relevant Coursework:** Write here

Aug 2022 - Present

***GPA: 4.0***

**University of Tehran**

***BSc in Computer Engineering***

**Thesis:** Online/Offline Evaluation of Recommendation Algorithms

**Advisor:** Prof.

**Relevant Coursework:** Write here

Sep 2017 - Sep 2022

***GPA: 3.68***

## Publications

**Combining Financial data and News Articles for Single Stock Market Prediction by prompting LLMs**

***5th ACM International Conference on AI in Finance | Under review, 2024***

- Ali Elahi, Fatemeh Taghvaei

## Project Work

- **Security Price Time-series Analysis Price Prediction Using Sequential ML Models (LSTM):**
- **Buy, Hold, or Sale? MDP model for Trading Based on Next Day Price Prediction:**
- **English to Persian Machine Translation with Transformer:**
- **Relation Extraction Task - SemEval Dataset Using Bi-LSTM Architecture:**
- **Image Captioning Model - Trained on Flickr8k - Convolutional + Bi-LSTM:**
- **Image Colorization - Stylization-based Architecture for Fast Deep Exemplar Colorization:**
- **MapReduce for Social Media Friend Recommendation:**
- **Product Recommendation Using Association Rules:**
- **Markov Decision Process Profit Optimization - On-policy/Off-policy Monte-Carlo, Double Q- learning, Tree Back-up, SARSA and n-Step Expected SARSA:**
- **Policy Iteration Algorithm for a Profit Maximization Problem:**