Soroush Jaberi

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Website: https://soroushjaberi.github.io/   **GitHub:** https://github.com/SoroushJaberi

Education

B.Sc. Computer Engineering (Software Engineering)

Overall GPA: 3.74 / 4
GPA of last 2 years: 3.81 / 4
Karaj Islamic Azad University, 2019-2023

➢ Selected Courses: A^{++}
Artificial Intelligence (expert system) = 20 out of 20
Data Mining = 20 out of 20
Algorithm design = 20 out of 20
Computer Graphics = 19.5 out of 20
Software Engineering = 19.25 out of 20

M.Sc. Student in Artificial Intelligence

Overall GPA: 4 / 4
Karaj Islamic Azad University, 2023-present

➢ Selected Courses: A^{++}
Machine Learning = 20 out of 20
Image Processing = 19.5 out of 20

Selected Projects

➢ Lung-Tumor-Segmentation-Using-PyTorch-Deep Learning
➢ Liver-Tumor-Segmentation-Using-PyTorch-DeepLearning
➢ Comprehensive NLP - Sentiment Analysis Algorithms
➢ Persian-sentiment-analysis-using-FastText-Model-NLP
➢ Live Bicep Counter - computer vision
➢ GUI application for image processing
➢ PDF-Similarity-Comparison
➢ Movie-Recommendation-And-Analysis
➢ Quiz Game for Children: Python
➢ Board Games: Python
➢ online website with some features (A demo of an online shopping website): Python, HTML, CSS
➢ Hirst painting: Python
➢ Detecting Motion (using OpenCV)
➢ Playing the Audio/Text to Speech (Using pyttsx3)
➢ webcam motion detector
➢ web scraper of property data
➢ interactive web graph
➢ database web application to collect data
➢ desktop graphical program that interacts with a database (Python and SQL)
➢ Implementation of Computer networks with Cisco routers and switches in packet tracer

Research Experience

> *Authors: Soroush Jaberi, Zeinab Alimardani, Amineh Amini*
>
> *Title: Enhancing Sentiment Analysis in NLP with Ensemble Methodologies: Integrating BERT and VADER.*
>
> *Status: In preparation [Target Journal: Expert Systems with Applications]*

Brief Description: This paper advances the domain of Natural Language Processing (NLP) sentiment analysis by exploring the incorporation of ensemble methodologies. We propose a novel approach by combining the deep learning model BERT with the lexicon-based model VADER, harnessing their complementary strengths to improve precision and reliability in sentiment interpretation. The study demonstrates how integrating context understanding from BERT with the sentiment lexicon of VADER can lead to more robust sentiment analysis frameworks.

> *Authors: Soroush Jaberi, Amineh Amini*
>
> *Title: A Systematic Mapping Study on Deep Learning-Based Biomedical Image Segmentation Techniques.*
>
> *Status: In preparation [Target Journal: Artificial Intelligence Review]*

Brief Description: This systematic mapping study analyzes a decade of research advancements in deep learning for biomedical image segmentation. It scrutinizes the widespread adoption of these techniques across various imaging modalities and the implementation of different network architectures. The paper evaluates the efficacy of supervised, semi-supervised, and unsupervised learning approaches in clinical applications and dissects the methods used to gauge segmentation accuracy. In highlighting trends and identifying gaps such as the need for more robust 3D network models and standardized evaluation protocols, this work provides a comprehensive synopsis that sets the stage for future innovations in medical imaging analysis.

Research Interest

Deep Learning Applications: Computer vision, speech recognition, and human-AI interaction.

Natural Language Processing (NLP): Sentiment analysis, chatbots, and machine translation.

Data Science and Analytics: Predictive modeling, data mining, and ethical data use.

Software Engineering: Robust software systems, AI integration.

Social Network Analysis: Dynamics within social networks, misinformation.

Internet of Things (IoT): Communication efficiency, smart environments, and IoT security.

Cloud Computing: Scalable and secure cloud infrastructures, resource management.

Technical Skills

Programming: Python, Java, JavaScript, C#, HTML, CSS, SQL

Machine Learning & Data Science: PyTorch, TensorFlow, scikit-learn, NumPy, pandas, XGBoost, OpenCV, NLTK, LightGBM, Matplotlib, Minitab, Anaconda, Jupyter Notebook

Development Tools: JetBrains, PyCharm, VMware, VirtualBox, Unity, Unreal Engine, Web Scraping

Other: Windows, Linux, MS Office

Work Experience

Tehran Telecommunication Company (Internship) – 2022-2023

Achievements:

- Monitoring network traffic & data.
- Analyzing and Documenting network connectivity data.
- Conducting few research on cloud computing and computer networking optimization.

Teaching Assistant, Karaj Islamic Azad University (2022-2023)

- ➢ *Data Mining:*

  - Collaborated with Dr. Amini to enhance the learning experience for students by actively participating in the design and evaluation of course assignments focused on data mining concepts and applications.

- ➢ *Algorithm Design:*

  - Assisted Dr. Saboohi in developing and accessing assignments that challenge students to design efficient algorithms, with an emphasis on applications in artificial intelligence*.*

Language Skills

English (pre-advanced)   Persian (Native)

References

- **Dr. Amineh Amini**
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  Personal Website: https://www.aminehamini.com/
  Google Scholar: https://scholar.google.com/citations?user=bFoUxcoAAAAJ

- **Dr. Hadi Saboohi**
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