Afrooz Mohandesian

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in afrooz-mohandesian   Github

Profile

Machine Learning and Software Developer with over 5 years of experience building intelligent systems and data-driven applications across healthcare, education, and e-commerce. Experienced in building ML workflows, using deep learning models in real applications, and developing practical software solutions. Experienced in working with large language models (LLMs), prompt engineering, and applied research in recommender systems and document understanding. Passionate about bridging the gap between cutting-edge AI research and impactful real-world applications through robust software architecture and machine learning engineering.

Skills

Languages: Python, JavaScript, C++, SQL, HTML/CSS

ML & Deep Learning: PyTorch, TensorFlow, Scikit-learn, Keras, Hugging Face

Prompt Engineering: OpenAI API, Prompt Crafting, GPT Fine-tuning, Few-shot & Zero-shot Learning

Data Science & Analytics: NumPy, Pandas, Matplotlib, OpenCV

Web Technologies: React.js, Next.js, Redux, Tailwind, MUI, React Native

MLOps & Tools: Git, Docker, Jupyter, Firebase

Databases: MySQL, PostgreSQL, Firebase

Experience

AI Product Developer   *Remote, USA*
Optimal Office Solutions Company   *Oct 2023 – Present*

- Designed and deployed machine learning models for document classification, access-level prediction, and user activity analysis.
- Led prompt engineering for OpenAI models to extract medical symptoms, summarize user actions, and automate content generation.
- Contributed to:
  - **MediNote Diagnostic Platform** ↗: Applied large language models (LLMs) to extract diagnostic elements from prescriptions and clinical notes.
  - **MathKicker.ai** ↗: Transformed math images and PDFs into accessible Word documents for visually impaired students using computer vision techniques and GPT-4 prompts.

Technologies: Python, OpenCV, Scikit-learn, OpenAI API, Prompt Engineering, NLP

Front-end Developer & AI Integrator   *Remote, Turkey*
NADGroup Company   *Nov 2022 – Present*

- **Genomin DNA Sequencing Platform** ↗ Developed modular, responsive React components to visualize complex DNA sequencing data, ensuring the platform is intuitive and user-friendly for medical professionals.
- **Rostam AI-Powered Recommendation Platform** ↗ Integrated ML-backed recommendation algorithms and similarity-based search, enhancing user experience with personalized product suggestions based on user behavior.
- **Fanamouz Web App** ↗ Developed an educational platform with interactive video and activity components, ensuring a seamless experience across both mobile and desktop devices.
- **Kioskedia.com** ↗ Developed a community site for architects using Next.js and built cross-platform mobile apps with React Native.

Technologies: React.js, Redux, Next.js, MUI, Tailwind CSS, React Native

Research Assistant
Seville University

Seville, Spain
Sep 2021 – Dec 2022

- Spearheaded advanced research on trust-based recommender systems, leveraging neural networks to enhance recommendation accuracy by incorporating user trust dynamics.
- Developed and optimized neural network models using Python and frameworks such as PyTorch, TensorFlow, and Keras to strengthen trust-based filtering and refine recommendation results.
- Innovatively integrated trust data into deep learning architectures to boost system scalability and performance, tackling challenges in sparse and complex datasets.
- Designed, executed, and led comprehensive experiments to showcase the effectiveness of NN-powered trust-based recommendations in realistic applications.

Technologies Used: Python, PyTorch, TensorFlow, Keras, Multi-GPU training, Recommender Systems, neural networks, clustering, k-means

Web Developer
Iseema Company (IPTV and Multimedia Provider)

Tehran, Iran
Apr 2014 – Feb 2020

- Developed a dashboard for IPTV applications, allowing content providers to post updates, share news, manage events, and communicate directly with viewers.
- Implemented responsive and user-friendly web interfaces for social media posts and online advertising using HTML, CSS, and JavaScript, ensuring optimal performance and accessibility across various devices and browsers.
- Designed and developed engaging multimedia content for social media platforms and digital advertisements, tailored specifically to the IPTV audience.

Education

Amirkabir University of Technology (Tehran Polytechnic)   Sep 2011 – Oct 2013
Master of Science, Computer Science (Artificial Intelligence Systems)   Sep 2011 – Oct 2013
- Among top 100 of thousands of applicants in national entrance exam.

University of Kashan   Oct 2005 – Sep 2009
Bachelor of Engineering, Computer Engineering (Software)

Key Projects

- **MediNote** – Prompt-based medical information extraction using OpenAI GPT models.
- **MathKicker.ai** – CV + GPT-4 system for accessible math document conversion.
- **Genomin** – Visual analytics for WES DNA sequencing results.
- **TrustRecSys** – Academic recommender system powered by trust-weighted neural models.

Research Interests

Prompt Engineering · NLP for Healthcare · Trust-Aware Recommender Systems · Data-centric AI · Explainable AI · Accessibility-focused ML

References

References are available upon request.