

Erfan Nourbakhsh

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EXPERIENCE

University Instructor, University of Texas at San Antonio (UTSA) *Aug 2025 - Present*

- Taught *CS 2113: Fundamentals of OOP*, focusing on encapsulation, abstraction, modularity, and **polymorphism**.
- Guided students in problem analysis and coding solutions with **Java** classes and objects.
- Introduced **computational complexity** concepts to evaluate and compare algorithm efficiency.

Research Assistant, University of Texas at San Antonio (UTSA) *May 2025 - Present*

- **Enhanced software accessibility** by investigating update regressions affecting blind and motor-impaired users and formulating mitigation guidelines.
- Improved OSS feature requests using DFG-based code summaries and **GPT-4o**.
- Advanced **cognitive load detection** by applying **ResNet** and transformer-based models to **ECG signals**, achieving **82.8% accuracy** on the CLARE dataset.

Graduate Research Assistant, University of Isfahan *Sep 2023 - Dec 2024*

- Designed a low-code platform to automatically generate **chatbots**, reducing manual **development effort**.
- Automated chatbot creation from user-provided designs, **improving accessibility and usability**.
- Built chatbots across multiple categories using **LLMs**.

Artificial Intelligence Specialist, Directam *Jun 2024 - Oct 2024*

- Integrated **AI models** into applications, improving scalability and reducing deployment issues.
- Developed NLP-driven systems to analyze Telegram interactions, **enhancing customer feedback analysis**.
- Built AI solutions: **Persian Car ASR**, Instagram Comment Generator, and **OCR-based Fortune Wheel Recognition**.

Artificial Intelligence Strategy Consultant, Pezeshke Khoob *Aug 2024 - Sep 2024*

- Guided AI-focused data preparation and analysis, **reducing processing time**.
- Designed recommender systems, **improving customer engagement**.
- Aligned predictive modeling with **strategic decision-making**.

Machine Learning Engineer, Eftekhhar Modiran *Mar 2023 - Sep 2023*

- Developed **EftekhharTalent**, an **ML and deep learning powered system** for job search and **candidate matching**.
- Collaborated with psychology and management teams to integrate **personality tests** into matching.
- Optimized **PyTorch** neural networks, improving matching accuracy.

Undergraduate Research Assistant, University of Isfahan *Nov 2022 - Feb 2024*

- Built a document summarization system combining **GNNs** with **BiLSTM** and **CNN** models.
- Applied **Graph Attention Networks (GATs)** to update semantic relationships.
- Designed a **summarization classifier** to select the most informative sentences.

Machine Learning Intern, Vitraco *Jul 2022 - Sep 2022*

- Built a **recommendation system** with **PyTorch** and scikit-learn to match loads with drivers.
- Applied **NLP** and data mining to analyze driver feedback.
- Refined recommendation algorithms with **real-world data**, improving assignment **accuracy**.

Frontend Developer Intern, Safir *Aug 2020 - Jan 2021*

- Designed and implemented Digipie with **ReactJS** and **TypeScript**, streamlining content evaluation.
- Developed **CSR and SSR applications**, maintaining quality standards.
- Optimized Digipie's design, **improving employee adoption** and workflow efficiency.

EDUCATION

Ph.D. in Computer Science *January 2025 - Present*

University of Texas at San Antonio (UTSA)

SKILLS

Programming Languages: Python, SQL, JavaScript, Java, C, C++, Bash, Ruby on Rails, TypeScript, Go

Data Analysis & Machine Learning: Pytorch, Pytorch Geometric, Tensorflow, OpenCV, Data Analysis, Data Visualization, A/B Testing, Hypothesis Testing, Regression, Segmentation, Experimentation, Pandas, NumPy, Matplotlib, Seaborn, scikit-learn, Apache Spark, PySpark, dbt, Airflow, Tableau, Power BI

Testing Tools: JUnit, Mockito, Pytest, RSpec, Jest

Mobile Development: Java, Android Studio, Flutter, XML, Swift

Software Engineering & Practices: Object-Oriented Programming (OOP), REST APIs, Web Development (HTML, CSS, JavaScript React.js, Node.js), SDLC, Git, GitHub, CI/CD Pipelines, Docker, Kubernetes (basics), Linux/Unix

Tools & Platforms: AWS (S3, Lambda, Redshift), GCP, Azure, MySQL, PostgreSQL, MongoDB, Jupyter, VS Code, Postman, Figma, Prometheus, CDN, Terraform, Containerization, Go, Rust, Elasticsearch, Redis, Snowflake