Samaneh Shirinnezhad

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Education

B.Sc. in Computer (Hardware) Engineering *September 2012 - December 2016*

Jundi Shapur University of Technology Dezful, Iran

- **Capstone Topic:** Design and Development of a VR Game with Motion Sensor Integration for Mobile Platforms using Unity and Google Cardboard
- **GPA:** 145 credits program with GPA of 17.51/20. GPA of the last two years is (3.81 / 4.00)
- **Selected Courses:** Advanced Programming, Algorithm Design, Data Structures, Artificial Intelligence, Data Transmission, Discrete Structures, Internet Engineering

Research Interests

- Human-Computer Interaction
- Interaction & UI/UX Design
- Information Visualization
- Applied Machine Learning
- Natural Language Processing
- AI in Healthcare & Education

Recent Publications

C=Conference, J=Journal, P=In Press, S=Submitted, U=Under Review

Find me at: Google Scholar ORCID

[J.4] **Navigating the Canadian Renewable Energy Landscape through Bibliometric and Machine Learning Insights**.
Samaneh Shirinnezhad, & Davoud Ghahremanlou.
International Journal of Global Warming, 37, 2025. [DOI]

[S.1] **Machine Learning for Enhanced Bibliometric Analysis of Renewable Energy Research Trends in Canada**.
Samaneh Shirinnezhad, & Davoud Ghahremanlou.
Submitted to *International Energy Journal*, 2025.

[J.3] **Optimizing Hybrid Energy Solutions for Enhanced Energy Resilience and Sustainability in Repulse Bay Using HOMER Pro**.
A. Ashouri Vajari, S. Kotian, S. Shirinnezhad, et al.
Journal of Green Economy and Low-Carbon Development, 3(2), 69–81, 2024. [DOI]

[J.2] **Enhancing Sustainability in Hopedale, Newfoundland and Labrador, Through Hybrid Microgrid System Design**.
A. Maliat, S. Kotian, S. Shirinnezhad, et al.
Power Engineering and Engineering Thermophysics, 3(1), 58–76, 2024. [DOI]

[J.1] **Optimizing Hybrid Energy Systems for Sustainable Development at the Canadian Arctic: A Case Study for Arviat**.
A. Ashouri Vajari, S. Kotian, S. Shirinnezhad, et al.
Journal of Urban Development and Management, 3(3), 150–163, 2024. [DOI]

Experience

Upwork [🌐] *April 2023 - Present*

Freelance Data Scientist & Frontend Developer Remote

- Delivered full-stack solutions in data analytics, frontend development, and UI/UX design for dashboards and interactive web tools.
- Designed clean, responsive interfaces with a focus on usability and accessibility across projects involving business intelligence, GIS, and social media analytics.
- Built custom machine learning models and visualization tools to support client decision-making.

Amoun Computer Institute *2020 - 2023*

Computer Science Tutor Andimeshk, Iran

- Tutored students in programming, data structures, and algorithms (Python, C++) and assisted with project work and exam prep.

Bartar Language School *2016 - 2020*

English Instructor Dezful, Iran

- Taught ESL skills and led interactive workshops to improve student fluency and engagement.

Selected Projects

AirSpell: AI-Powered Air-Writing for Early Literacy *July 2025*
Tools: React, TensorFlow.js, HTML5 Canvas, JavaScript [GitHub]
- Designed a React + TensorFlow.js app for spelling practice via real-time hand tracking and air-writing.
- Addresses literacy and motor skill development through playful, embodied interaction.
- Supports adaptive feedback, undo/redo controls, and accessibility for diverse learners, with future plans to add scoring and gamification.

Smart Text Enhancer *May 2025*
Tools: JavaScript, Chrome Extensions, OpenAI API [GitHub]
- Built a GPT-3.5-powered Chrome extension for simplifying, translating, and rephrasing text directly on webpages.
- Enhances comprehension and digital literacy by adapting content to reading level, language, and tone.
- Offers customizable reading aids (e.g., dyslexia font, font size), supporting personalized engagement.

Stock Market Prediction Analysis *October 2024*
Tools: Python, Pandas, Scikit-learn, TensorFlow, LSTM, Random Forest [GitHub]
- Predicted significant stock price movements using a Random Forest model, achieving an F1 score of 82%.
- Utilized an LSTM network to forecast daily closing prices, reaching an MSE of 0.004 on the test dataset.

Personal Portfolio Website *August 2024*
Tools: Next.js, React, Tailwind CSS, JavaScript, GitHub Pages [GitHub]
- Designed and developed a responsive personal portfolio website showcasing my skills and projects, with a modern, clean, and interactive UI.
- Built with Next.js and React for performance, SEO, and component-based architecture; styled with Tailwind CSS.

Insights into ChatGPT Research *May 2023*
Tools: Python, BeautifulSoup, Google Scholar API, Pandas, NLTK, spaCy, LDA [GitHub]
- Applied web scraping, NLP preprocessing, and machine learning (LDA) to analyze research trends and key topics in ChatGPT studies.

Social Media Analysis of ChatGPT (Twitter and Reddit) *April 2022*
Tools: Python, Pandas, NLTK, spaCy, LDA [GitHub]
- Scraped and analyzed Twitter and Reddit data on ChatGPT, using sentiment analysis and topic modeling to uncover community insights.

Honors and Awards

Dean's List *Multiple Semesters (Fall 2014, Winter 2015, Fall 2015, Winter 2016)*
Jundi Shapur University of Technology
- Recognized for consistent high academic performance over multiple semesters.
- Demonstrated exceptional academic dedication and achievement, placing in the top 10% of the class.

Annual JSU Programming Contest Winner *September 2015*
Jundi Shapur University of Technology
- Secured first place in the annual JSU Programming Contest, specializing in algorithm design and implementation using C++.
- Excelled in solving complex problems under rigorous time constraints, demonstrating advanced proficiency in C++.
- Outperformed other competitors, showcasing superior competitive programming skills.
- Received a certificate and a recognition plaque for outstanding performance.

Skills

Languages: English (IELTS Academic - Overall Band Score: 8.5), Persian (Native)
Programming Languages: Python, R, C++, C#, SQL
Virtual Reality Development: Unity3D, Unreal Engine, VR SDKs
Web Technologies: HTML, CSS, JavaScript, React
Machine Learning: TensorFlow, Scikit-learn, Keras, PyTorch
Data Science: R, Julia, Python scientific stack (pandas, numpy, etc.), relational databases (MySQL, Microsoft SQL Server)