Samaneh Shirinnezhad

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Education

- **B.Sc. in Computer (Hardware) Engineering** *September 2012 - December 2016*
  Jundi Shapur University of Technology Dezful, Iran
  - **Thesis:** 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 (3.78/4.00)
  - **Selected Courses:** Advanced Programming, Algorithm Design, Data Structures, Artificial Intelligence, Data Transmission, Discrete Structures, Internet Engineering

Research Interests

- Machine Learning
- Deep Learning
- Natural Language Processing
- UI/UX Design
- Interactive Systems
- AI in Healthcare & Education

Recent Publications

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

Find me at: Google Scholar ORCID

[P.1] Samaneh Shirinnezhad, & Dr. Davoud Ghahremanlou. (2025). **Navigating the Canadian Renewable Energy Landscape through Bibliometric and Machine Learning Insights**. *International Journal of Global Warming*, 37. [DOI]

- Developed an AI-assisted topic modeling pipeline (LDA + ChatGPT) and explored HCI implications for visual analytics and inclusive, community-led sustainability planning.

[S.1] Samaneh Shirinnezhad, & Dr. Davoud Ghahremanlou. (2025). **Machine Learning for Enhanced Bibliometric Analysis of Renewable Energy Research Trends in Canada**. Manuscript submitted for publication in *International Energy Journal*.

[J.1] A. Ashouri Vajari, S. Kotian, S. Shirinnezhad, et al. (2024). **Optimizing Hybrid Energy Solutions for Enhanced Energy Resilience and Sustainability in Repulse Bay Using HOMER Pro** . *Journal of Green Economy and Low-Carbon Development* , Vol. 3, Issue 2, pp. 69-81. [DOI]

[J.2] A. Maliat, S. Kotian, S. Shirinnezhad, et al. (2024). **Enhancing Sustainability in Hopedale, Newfoundland and Labrador, Through Hybrid Microgrid System Design** . *Power Eng. Eng. Thermophys.* , Vol. 3, Issue 1, pp. 5876. [DOI]

[J.3] A. Ashouri Vajari, S. Kotian, S. Shirinnezhad, et al. (2024). **Optimizing Hybrid Energy Systems for Sustainable Development at the Canadian Arctic: A Case Study for Arviat** . *Journal of Urban Development and Management* , Vol. 3, Issue 3, pp. 150-163. [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%, indicating a good balance between precision and recall.
  - Utilized an LSTM network to forecast daily closing prices, reaching a Mean Squared Error (MSE) of 0.004 on the test dataset, demonstrating accurate short-term predictions based on historical data.
- **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 user interface.
  - Built with Next.js and React for optimized performance, SEO, and component-based architecture, and 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

- **Deans 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)