Saeed Rafieyan

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Date	Academic Background
Sep 2018 Feb 2022	Master of Science in Chemical Engineering – Biomedical Engineering Faculty of Chemical Engineering, Tarbiat Modares University Thesis: Predicting cell behavior on cardiac tissue engineering scaffolds using machine learning algorithms [Note: The extended duration of my master's program was due to delays caused by the COVID-19 pandemic and related lockdown measures.]
Sep 2013 Sep 2017	Bachelor of Science in Chemical Engineering Faculty of Chemical Engineering, Tafresh University Thesis: Simulation of the biodiesel production process with Aspen HYSYS

Research Interests

Applications of AI in Medical and Healthcare, Protein Design Using AI, Drug Discovery Using AI, Bioinformatics, Medical Imaging, Personalized Medicine, Tissue Engineering, Chemical Engineering

Publications

2025 **Rafieyan, S.**, Partovi-nasr, M., Ansari, E., Kheradvar Kolour, A., Banimohamad-Shotorbani, B., Vasheghani-Farahani, E. (2024). A fully integrated multi-tissue/machine learning online platform for prediction, optimization, and procedure generation for fabricating tissue engineering scaffolds by 3D (bio)printing. *Submitted to Computers in Biology and Medicine.*

2025 Kargaran, E., Song, G., Shetu, N., **Rafieyan, S.**, Madadi, M., Hadiyanto, H., Sun, C., Sun, F., Gupta, V. (2025). Optimizing Organosolv Pretreatment Through Machine Learning for Efficient Lignocellulose Fractionation. *Submitted to Green Chemistry.*

2025 Qiao, Y., Kargaran, E., Ji, H., Madadi, M., **Rafieyan, S.**, & Liu, D. (2025). Data-driven insights for enhanced cellulose conversion to 5-hydroxymethylfurfural using machine learning. *Bioresource Technology*, 430, 132582. https://doi.org/10.1016/j.biortech.2025.132582

2024 **Rafieyan, S.**, Ansari, E., & Vasheghani-Farahani, E. (2024). A practical machine learning approach for predicting the quality of 3D (bio)printed scaffolds. *Biofabrication*, 16(4), 045014. https://doi.org/10.1088/1758-5090/ad6374

2024 **Rafieyan, S.**, Boojari, M. A., Setayeshnia, A., Fakhroleslam, M., Sánchez-Ramírez, E., Bay, M. S., & Segovia-Hernández, J. G. (2024). Acetone-butanol-ethanol fermentation products recovery: Challenges and opportunities. *Chemical Engineering Research and Design*, *205*, 640-664. https://doi.org/https://doi.org/10.1016/j.cherd.2024.04.021

2023 **Rafieyan, S.**, Vasheghani-Farahani, E., Baheiraei, N., & Keshavarz, H. (2023). MLATE: Machine learning for predicting cell behavior on cardiac tissue engineering scaffolds. *Computers in Biology and Medicine*, *158*, 106804. https://doi.org/https://doi.org/10.1016/j.compbiomed.2023.106804

2022 Fan, J., Abedi-Dorcheh, K., Sadat Vaziri, A., Kazemi-Aghdam, F., **Rafieyan, S.**, Sohrabinejad, M., Ghorbani, M., Rastegar Adib, F., Ghasemi, Z., Klavins, K., & Jahed, V. (2022). A Review of Recent Advances in Natural Polymer-Based Scaffolds for Musculoskeletal Tissue Engineering. *Polymers*, *14*(10), 2097. https://www.mdpi.com/2073-4360/14/10/2097

Skills

Computational

- Supervised and Unsupervised Machine Learning Algorithms
- Deep Learning Algorithms and Pytorch Framework
- Natural Language Processing
- Visualization libraries such as Matplotlib, Plotly, etc.
- Pandas, Numpy and Sklearn
- Database Development

Experimental

- Cell Culture
- MTT Assay
- Decellularization Protocols
- Hydrogel Preparation
- Scaffold Fabrication
- 3D Printing
- Counting, Expanding, Freezing and Thawing of Cells
- Freeze-Drying

Academic Experiences

Jan. 2025 - Present Research Assistant in Dr. Madadies's research group at Jiangnan University, working as a Data Scientist.

Sep. 2023 - Present Research Assistant in Dr. Fakhroleslam's research group at Tarbiat Modares University, working as a Data Scientist.

Feb. 2024 – Dec. 2024 Actively contributing to "TissueGPT: Fine-Tuned BioGPT for Biomedical Text Generation" a domain-based large language model (LLM) using natural language processing (NLP) in the field of tissue engineering under the supervision of Prof. Ebrahim Vasheghani-Farahani (This project currently on development).

Licenses and Certificates

Neural Networks and Deep Learning	Coursera	[Link]
Data Visualization using Plotly	Coursera	[Link]
Deep Learning with PyTorch: Image Segmentation	Coursera	[Link]
Deep Learning with PyTorch: Object Localization	Coursera	[Link]
Introduction to Genomic Technologies	Coursera	[Link]
Python for Genomic Data Science	Coursera	[Link]

Languages

English: TOEFL 90/120 (R:23, L:25, S:21, W:21).

Industrial Experience

2023-Present Data Scientist, HiWEB

Customer Segmentation, Churn Prediction, Customer Behavior Prediction, QA and QC Automation (Speech to text for Persian language)

2021 Data Scientist, YecomSoft
Persian NLP, Persian Text-to-Speech

2020 Django Web Developer Intern, MAPSA

References

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Dr. Mohammad Fakhroleslam
Assistant Professor, Department of Chemical Engineering, Tarbiat Modares University
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Dr. Ahmad Bayat
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Dr. Siavash Sattar
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