Postdoctoral Fellows   myousefnezhad@gmail.com (preferred)
Department of Computing Science   myousefnezhad@ualberta.ca
University of Alberta   Website: www.yousefnezhad.com
Edmonton, Alberta, Canada   GitHub: www.github.com/myousefnezhad
Cell: +1 780-264-4920   LinkedIn: www.linkedin.com/in/myousefnezhad

RESEARCH INTERESTS

Machine Learning: Multi-View Learning; Representation Learning; Big Data; Deep Learning; Probabilistic, Bayesian, and Causal Models; Energy-based Approaches.

Medical Application: Neuroimage and Health Records Analysis; Disease diagnosis based on text, audio, and wearable device data.

EDUCATIONS

Doctor of Philosophy   Sep/2014–Jun/2018
Computer Science, Nanjing University of Aeronautics and Astronautics

Master's Degree   Feb/2011–Sep/2013
Information Technology, Mazandaran University of Science and Technology

Bachelor's Degree   Sep/2008–Aug/2010
Computer Engineering, Mazandaran University of Science and Technology

Associate Degree   Sep/2004–Oct/2006
Computer Engineering, Islamic Azad University (Eghlid Branch)

ACADEMIC POSITIONS

Postdoctoral Fellows   Apr/2019–present
Department of Computing Science, Faculty of Science, University of Alberta (full-time job).

Postdoctoral Fellows   Jul/2018–Mar/2019
Department of Computer Science and Technology, Nanjing University of Aeronautics and Astronautics (full-time job).

Research Assistant   Sep/2014–Jun/2018
Department of Computer Science and Technology, Nanjing University of Aeronautics and Astronautics (part of my Ph.D. degree).

Teacher Assistant   Feb/2015–Sep/2015
Department of Computer Science and Technology, Nanjing University of Aeronautics and Astronautics, *Course: Data Mining* (part-time job)

Lecturer Feb/2010–Jul/2014

Department of Computer Science, Mazandaran University of Science and Technology, *Courses: Data Mining, Expert System, Machine Learning, Computer Networks & Lab., Network Operating System & Lab., Microprocessor & Lab., FPGA, VHDL & Verilog* (part-time job)

<table>
<tr><td>INDUSTRIAL
EXPERIENCES</td><td>Lead Software and Design
FutureCite (based on my UofA Postdoctoral Fellow position)
* Under R. Greiner MITACS Grant (for DevOps, MLOps and Data Analysis)</td><td>Jan/2023–present</td></tr>
</table>

Lead Software and Design Jan/2023–present

FutureCite (based on my UofA Postdoctoral Fellow position)
* Under R. Greiner MITACS Grant (for DevOps, MLOps and Data Analysis)

Computer Engineer Aug/2013–Aug/2014

Rasa Ertebatat Soffe Co. (full-time job)

Computer Engineer Feb/2009–Jul/2013

Rasa Ertebatat Soffe Co. (part-time job)

Computer Engineer Nov/2006–Aug/2008

Reza Noor Ltd. (full-time job)

PUBLICATIONS **Refereed Journal Articles**

- P. Wang, X. Cao, Y. Zhou, P. Gong, **M. Yousefnezhad**, W. Shao, D. Zhang, A comprehensive review on motion trajectory reconstruction for EEG-based brain-computer interface. Frontiers in Neuroscience, June 2, 2023. DOI: 10.3389/fnins.2023.1086472.

- S. Huang, L. Sun, **M. Yousefnezhad**, M. Wang, D. Zhang, Functional Alignment-Auxiliary Generative Adversarial Network-based Visual Stimuli Reconstruction via Multi-subject fMRI. IEEE Transactions on Neural Systems and Rehabilitation Engineering, June 6, 2023. DOI: 10.1109/TNSRE.2023.3283405.

- **M. Yousefnezhad**, D. Zhang, A.J. Greenshaw, R. Greiner, Editorial: Multi-Site Neuroimage Analysis: Domain Adaptation and Batch Effects. Frontiers in Neuroinformatics, Augest 2022 DOI: 10.3389/fninf.2022.994463.

- J. Sawalha[*], **M. Yousefnezhad**[*], Z. Shah, M.R.G. Brown, A.J. Greenshaw, R. Greiner, Detecting Presence of PTSD Using Sentiment Analysis From Text Data. Frontiers in Psychiatry, 12:811392. DOI: 10.3389/fpsyt.2021.811392. *Equal contribution*, 2022.

- J. Sawalha[*], **M. Yousefnezhad**[*], A.M. Selvitella, B. Cao, A.J. Greenshaw, R. Greiner, Predicting pediatric anxiety from the temporal pole using neural responses to emotional faces. Nature Scientific Reports DOI: 10.1038/s41598-021-95987-4. *Equal contribution*, 2021.

- S. Huang, L. Sun, **M. Yousefnezhad**, M. Wang, D. Zhang, Temporal Information Guided Generative Adversarial Networks for Stimuli Image Reconstruction from Human Brain Activities. IEEE Transactions on Cognitive and Developmental Systems (TCDS), DOI: 10.1109/TCDS.2021.3098743. 2021.

- **M. Yousefnezhad**, J. Sawalha, A. Selvitella, D. Zhang, Deep Representational Similarity Learning for analyzing neural signatures in task-based fMRI dataset. Neuroinformatics, 2020.

- **M. Yousefnezhad**, A. Selvitella, L. Han, D. Zhang, Supervised Hyperalignment for multi-subject fMRI data alignment. IEEE Transactions on Cognitive and Developmental Systems. 2020.

- J. Chen, J. Tan, A.J. Greenshaw, J. Sawalha, Y. Liu, X. Zhang, W. Zou, X. Cheng, W. Deng, Y. Zhang, L. Cui, C. Liu, J. Sun, X. Cheng, Q. Wu, S. Li, S. Mai, X. Lan, Y. Chen, Y. Cai, C. Zheng, D. Cheng, B. Zhang, C. Yang, X. Li, X. Li, B. Ye, **M. Yousefnezhad**, Y. Zhang, L. Zhao, J.C. Soares, X. Zhang, T. Li, B. Cao, L. Cao, CACNB2 rs11013860 polymorphism correlates of prefrontal cortex thickness in bipolar patients with first-episode mania. Journal of Affective Disorders, Vol. 268, 1 May 2020, pp. 82-87, 2020.

- **M. Yousefnezhad**, D. Zhang, Multi-Objective Cognitive Model: a supervised approach for multi-subject fMRI analysis. Neuroinformatics, Springer, 2018.

- **M. Yousefnezhad**, D. Zhang, Anatomical Pattern Analysis for decoding visual stimuli in human brains. Cognitive Computation, 2017.

- **M. Yousefnezhad**, S. J. Huang, D. Zhang, WoCE: a framework for clustering ensemble by exploiting the wisdom of Crowds theory. IEEE Transactions on Cybernetics, IEEE, 2017.

- F. Asghari-Paeenroodposhti, S. Nourian, **M. Yousefnezhad**, Wised Semi-Supervised Cluster Ensemble Selection: A New Framework for Selecting and Combing Multiple Partitions Based On Prior knowledge. Journal of Advances in Computer Research, vol. 8 (1), 2017.

- **M. Yousefnezhad**, A. Reihanian, D. Zhang, B. Minaei-Bidgoli, A new selection strategy for selective cluster ensemble based on Diversity and Independency. Engineering Applications of Artificial Intelligence (EAAI), Elsevier, vol. 56, pp. 260-272, 2016.

- M. Kazemi, **M. Yousefnezhad**, S. Nourian, A New Approach in Persian Handwritten Letters Recognition Using Error-Correcting Output Coding. Journal of Advances in Computer Research, vol. 6 (4), 2015.

- H. Alizadeh, **M. Yousefnezhad**, B. Minaei-Bidgoli, Wisdom of Crowds Cluster Ensemble. Intelligent Data Analysis (IDA), IOS Press, vol. 19 (3), 2015.

PUBLICATIONS **Refereed Conference Papers**

- M. Soltanpour, **M. Yousefnezhad**, R. Greiner, B. Buck, B. Boulanger, Using temporal GAN to translate the current CTP scan to follow-up MRI, for predicting final acute ischemic stroke lesions. SPIE Medical Imaging. 19-20 Feb 2023. San Diego, California, United States.

- **M. Yousefnezhad**, A. Selvitella, D. Zhang, A.J. Greenshaw, R. Greiner, Shared Space Transfer Learning for analyzing multi-site fMRI data. The 24th Conference on Neural Information Processing Systems (NeurIPS2020), December/6—12, ~~Vancouver, Canada~~, virtual-only conference, 2020.

- S. Huang, L. Sun, **M. Yousefnezhad**, M. Wang, D. Zhang, Perceived Image Reconstruction from Human Brain Activity via Time-series Information Guided Generative Adversarial Networks. The 27th International Conference on Neural Information Processing (ICONIP2020), Nov/18—22, ~~Bangkok, Thailand~~, virtual-only conference, 2020.

- B. Behroozi Asl, **M. Yousefnezhad**, K. Wallace, E. Yang, L. Roper, G. Aryal, R. Isenberg, R.J. Lodhi, P. Carnes, B. Green, R. Greiner, K.J. Aitchison, Using Machine Learning to Explore Problematic Sexual Behavior and Related Conditions. Virtual World Congress of Psychiatric Genetics (WCPG2020), October/19—21, virtual-only conference, 2020.

- X. Sheng, **M. Yousefnezhad**, T. Xu, N. Yuan, D. Zhang, Gradient-based Representational Similarity Analysis with Searchlight for Analyzing fMRI Data. 1st Chinese Conference on Pattern Recognition and Computer Vision 2018 (PRCV18), Nov/23-26, Guangzhou, China.

- T. Xu, **M. Yousefnezhad**, D. Zhang, Gradient Hyperalignment for multi-subject fMRI data alignment, 15th Pacific Rim International Conference on Artificial Intelligence (PRICAI 2018), Nanjing, China, August 28-31, 2018.

- **M. Yousefnezhad**, D. Zhang, Deep Hyperalignment, 31st Advances in Neural Information Processing Systems (NIPS), Long Beach, USA, December/4-9, Spotlight Presentation, 2017.

- **M. Yousefnezhad**, D. Zhang, Multi-Region Neural Representation: A novel model for decoding visual stimuli in human brains. SIAM International Conference on Data Mining (SDM), Houston, Texas, USA, April/27-29, pp. 54-62, 2017.

- **M. Yousefnezhad**, D. Zhang, Local Discriminant Hyperalignment for multi-subject fMRI data alignment. 34th AAAI Conference on Artificial Intelligence (AAAI), San Francisco, California, USA, February/4-9, pp. 59-65, 2017.

- **M. Yousefnezhad**, D. Zhang, Decoding visual stimuli in the human brain by using Anatomical Pattern Analysis on fMRI images. 8th International Conference on Brain Inspired Cognitive Systems (BICS), Beijing, China, November/28-30, LNAI: 10023, pp. 47-57, **Best Student Award**, 2016.

- M. Bagheri, **M. Yousefnezhad**, A. Reihanian, Non-functional requirement management in service orientation by using aspect orientation. 3rd International Conference on applied research in Computer and Information Technology, Malekeashtar University of Technology, Tehran, Iran, February/04, 2016.

- **M. Yousefnezhad**, D. Zhang, Weighted Spectral Cluster Ensemble. IEEE International Conference on Data Mining series (ICDM'15), Atlantic City, New Jersey, USA, pp. 549-558, Nov/14-17, 2015.

- A. Reihanian, B. Minaei-Bidgoli, **M. Yousefnezhad**, Evaluating the effect of topic consideration in identifying communities of rating-based social networks. 7th International Conference on Information and Knowledge Technology (IKT'15), Urmia, Iran, May/26-28, 2015.

- S. Aghaei Nezhad Firouzja, **M. Yousefnezhad**, M. Fauzi Othman, M. Samadi, A wised routing protocols for Leo Satellite Networks. 10th Asian Control Conference, Universiti Teknologi Malaysia, Malaysia, 2015.

- M. Tourandaz, **M. Yousefnezhad**, S. Nourian, To propose a new method for diagnosing Alzheimer's disease based on the selected features via sparse coding. 7th Iranian & 1st International Conference of Knowledge Management (ICKM'15), Shahid Beheshti University, Tehran, Iran, 2015.

- M. Tourandaz, **M. Yousefnezhad**, S. Nourian, Diagnosis of Alzheimer's Disease by applying Support Vector Machine on the Locally Linear Embedding mapped data. 1st ICCONF, Tehran, Iran, 2015.

- M. Tourandaz, **M. Yousefnezhad**, S. Nourian, Diagnose mild cognitive impairment's disease based on the selected features via sparse coding. National Conference on Intelligent Systems and Communications Technology (TSPI'15), Tabriz, Iran, 2015.

- M. Tourandaz, **M. Yousefnezhad**, S. Nourian, To propose a new method for predicting Alzheimer's disease in MCI subjects based on the selected features via sparse coding. National Conference on Information & Communication Technology (ICT'15), Shahid Beheshti University, Tehran, Iran, 2015.

- M. Kazemi, **M. Yousefnezhad**, S. Nourian, Persian Handwritten Letter Recognition Using Ensemble SVM Classifiers Based on Feature Extraction. National Conference on Intelligent Systems and Information and Communications Technology, Tabriz, Iran, 2015.

- M. Kazemi, **M. Yousefnezhad**, S. Nourian, Persian Handwritten Letters Recognition with Using Ensemble Methods. 2nd Conference on Computer and Information Technology (CSCCIT'14), Tabriz, Iran, 2014.

- **M. Yousefnezhad**, H. Alizadeh, B. Minaei-Bidgoli, New cluster ensemble selection method based on Diversity and Independent metrics. 5th Conference on Information and Knowledge Technology (IKT'13), Shiraz, Iran, 2013.

RESEARCH GRANTS	**MITACS**, Canada 2023–2023 * Provided by R. Greiner as Principle Investigator and FutureCite. 15,000 CAD total for 6 months (Jul-Dec).

RESEARCH GRANTS

MITACS, Canada   2023–2023
* Provided by R. Greiner as Principle Investigator and FutureCite.
15,000 CAD total for 6 months (Jul-Dec).

MITACS, Canada   2023–2023
* Provided by R. Greiner as Principle Investigator and FutureCite.
15,000 CAD total for 4 months (Feb-Jun).

Pfizer, Canada   2022–2023
* Provided by Prof. A.J. Greenshaw as Principle Investigator

25,000 CAD total for 6 months.

The Alberta Machine Intelligence Institute (Amii), Canada   2019–2024
* Provided by Prof. R. Greiner as Principle Investigator
225,000 CAD total for five years.

Jiangsu International Young Scientists, China   2018–2019
400,000 RMB (~80,000 CAD) total for two years.

Chinese Government Scholarship (CSC), China   2014–2018
* Provided under the supervision of Prof. D. Zhang as part of Ph.D. program
220,000 RMB (~44,000 CAD) total for four years

AWARD

- Best Ph.D. thesis award at the Nanjing University of Aeronautics and Astronautics, 2018.

- The best student paper award in the BICS for our paper entitled "Decoding visual stimuli in the human brain by using Anatomical Pattern Analysis on fMRI images," 2016.

- Outstanding paper award 2015 in the International Academic Conference for Graduates, Nanjing University of Aeronautics and Astronautics, for our paper entitled "Adaptive Weighted Spectral Clustering."

- Outstanding paper award 2014 in the International Academic Conference for Graduates, Nanjing University of Aeronautics and Astronautics, for our paper entitled "Wisdom of crowd Cluster Ensemble."

- Invited to the Ph.D. course as a Brilliant Student with full scholarship of China, 2014.

- Graduated as the top student over 25 peers in the course (M.Sc.), "Mazandaran University of Science and Technology," Iran, 2013

- Invited to M.Sc. interview as a Brilliant Student without the entrance exam in "Mazandaran University of Science and Technology," Iran, 2010.

- Graduated as the top student over 30 peers in the course (B.Sc.), "Mazandaran University of Science and Technology," Iran, 2010.

- Invited to B.Sc. interview as a Brilliant Student without the entrance exam in "Islamic Azad University," 2006.

- Graduated as the top student over 40 peers in the course (Associate), "Islamic Azad University Eghlid branch," Iran, 2006.

- 3rd in Mazandaran Kharazmi Festival for designing computer software in order to manage and control the cost and time in the Industrial Projects, 2001

- 2nd programmer in National Computer Programming Competition, Mazandaran, Iran, 1999.

- **M. Yousefnezhad,** Reading Minds: A Neuroscience Application of Machine Learning, Keynote, NatChat, University of Alberta, Canada, Mar, 2022.

- **M. Yousefnezhad,** Machine Learning Applications in NeuroInformatics, Keynote (in cooperation with Prof. Russ Greiner), Neuroscience and Mental Health Institute (NMHI), University of Alberta, Canada, Jan, 2022.

- **M. Yousefnezhad,** Shared Space Transfer Learning for analyzing multi-site fMRI data, AI Seminar, University of Alberta, Canada, Aug, 2021.

- **M. Yousefnezhad,** Human Brain Mapping and Decoding, AI Seminar, University of Alberta, Canada, May, 2019.

- **M. Yousefnezhad,** Analyzing Human Brain Patterns by using deep approaches, Keynote, 1st Machine Learning, Optimization, and Control (MLOC'18), Shenzhen, China, 2018.

- **M. Yousefnezhad**, Deep Hyperalignment. Spotlight, 15th Workshop in Machine Learning and Application (MLA'17), Beijing Jiaotong University, China, 2017.

- **M. Yousefnezhad**, Adaptive Weighted Spectral Clustering. Keynote, 3rd International Conference of Postgraduates, Nanjing University of Aeronautics and Astronautics, China, Opening Talk, 2015.

- **M. Yousefnezhad**, Wisdom of Crowds Cluster Ensemble Selection. Keynote, 2nd International Conference of Postgraduates, Nanjing University of Aeronautics and Astronautics, China, Opening Talk, 2014.

- **M. Yousefnezhad**, Network Security: A modern approach, Keynote, 1st Annual Conference, Mazandaran University of Science and Technology, Iran, 2011.

Guest Editorial

Frontiers in Neuroinformatics; Research Topic: *Multi-Site Neuroimage Analysis: Domain Adaptation and Batch Effects*   2022

Conference Reviewer

Conference on Neural Information Processing Systems (NeurIPS) 2018–2023

 International Conference on Learning Representations (ICLR)   2022

International Conference on Machine Learning (ICML)   2018–2019, 2021

Association for the Advancement of Artificial Intelligence (AAAI)2018–2021

International Conference on AI and Statistics (AISTATS)   2017–2019

International Joint Conferences on Artificial Intelligence (IJCAI) 2018–2017

The Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD)   2015–2016

Journal Reviewer

Psychological Bulletin

IEEE Transactions on Cybernetics

IEEE Transactions on Neural Networks and Learning Systems

IEEE Transactions on Cognitive and Developmental Systems

IEEE Transactions on Medical Imaging

IEEE Transactions on Applied Perception

ACM Transactions on Autonomous and Adaptive Systems

Pattern Recognition

Cognitive Computation

Neuroinformatics

Springer Multimedia Systems

BMC Public Health

International Journal of Information Technology & Decision Making

Science China–Information Sciences

PROJECTS

Machine Learning Related Projects

- Designing, implementing, and MLOps a web-based NLP platform for FutureCite.
- Designing, implementing, and DevOps a mobile application to apply machine learning analysis to health data generated by wearables for FutureCite.
- Founder of MedAI
  This is an under-developing web and mobile platform as a distributed machine learning solution for medical applications. It can process text, audio, wearable, anatomical, and functional images - e.g., CT, MRI, fMRI, etc. MedAI employs NodeJS, FastAPI, Rust (Actix), Docker, and Kubernetes to provide backend services. The distributed

machine learning engine is developed using Python, Tensorflow, Rust, and bash script.

- Founder of Easy fMRI (a toolbox for human brain mapping and decoding). Website: https://easyfmri.learningbymachine.com

- Founder of Easy Data (a repository for sharing preprocessed task-based fMRI datasets). Website: https://easydata.learningbymachine.com

- Founder of easyX project: a Python library for storing big, complex data structures. Website: https://pypi.org/project/easyx/

- Suicide prediction based on Chongqing, China dataset: A health record project

- Diagnosing of the stork in mouse brains based on Calcium images

- Predicting cognitive tasks in mouse brains by using EEG

- Designing Expert System for forecasting production rate in Reza Noor Ltd.

- Designing cheat detection for the finance system in Reza Noor Ltd.

- Designing and implementing Smart Identifier (a general smart key).

Computing Engineering Related Projects

- Designing, migrating, and scaling the FutureCite platform from a bare-metal server to a microservice architecture based on Kubernetes and PostgreSQL.

- Designing and implementing Data Center for Sari municipality (Rasa Ertebatat Soffe Co.)

- Designing and implementing the network in Reza Noor Ltd.

- Designing FPGA, USB, and PCI learning kit (for MUST University).

- Designing Emergency lights, LED halogen lights, and fluorescent blast for Reza Noor Ltd.

- Designing ICT-Master plan for Mazandaran University of Science & Technology

- Analysis and implementation of software for network management at Reza Noor Ltd.

ENDORSED
SKILLS

Neuroscience: AFNI, FSL, SPM, FreeSurfer, Group ICA, NIfTI.

Machine Learning Library: Scikit-learn, Tensorflow (+Probability, GPflux), JAX, PyTorch, PyWhy, Z3 API, Stable-Baselines3.

Programming Languages: Python, Javascript, SwiftUI, Rust, Bash, MatLab, C, C++.

Database: PostgreSQL, MongoDB, Redis, MySQL, Microsoft SQL, Oracle Database.

Operating System: Linux (Arch, Fedora, and Debian), OSX, Windows, Solaris, Cisco IOS.

DevOps: Docker, Kubernetes, CI/CD (GitLab and GitHub), JWT.

Cloud Platform: Amazon AWS, Google Cloud, Microsoft Azure.