VAHID SEYDI

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RESEARCH INTEREST

Bayesian Optimization

Model

Black-box optimization
Multi-objective Black-box optimization
Meta-Learning
Gaussian Process

Application

Hyper-parameter optimization
few-shot Learning
Transfer learning

Deep Learning

Model

Deep Generative Models(GAN & VAE)
CNN and RNN(GRU,LSTM) based models
Bayesian Deep Learning
Attention Mechanism
Supervised & Unsupervised deep models

Application

NLP & Text mining
Predictive Maintenance
Anomaly detection
Time Series Forecasting
Machine Vision and Audio(speech) Processing
Health Care

Reinforcement Learning

Model

Deep Reinforcement Learning
Adversarial Learning
Actor-Critic Model
Q-Learning & Deep Q-Network

Application

Autonomous Agent
Continuous Control Systems
Trust Region Optimization(Sentences Generation)

Probabilistic models and latent factor analysis

Model

Clustering & Retrieval
Matrix Factorization(PMF, NMF,...)
Mixture Models
Explainable Machine Learning(Bayes Net)

Application

Topic Model(LDA)
Recommender Systems
Graph Data(Social Network) Analysis
Community Detection
Dimension Reduction

EDUCATION

School of Artificial Intelligence
April 2019 – June 2019

Pi School, Pi Campus, Rome, Italy
(one of 20 merit-based full scholarships)

Thesis:	Predicting failures in medium voltage lines from sequence of SCADA events. (Sponsored By enel)
Concentrations:	Deep Learning, categorical time series prediction, anomaly detection(supervised and unsupervised), generative models, embedding methods.
Mentors:	**Sébastien Bratières** from university of Cambridge and director of AI in Translated; & **Francesco Mosconi**, CEO and Chief Data Scientist at CATALIT, San Francisco, California.
Alumni:	I am included as the AI program Alumni. https://picampus-school.com/about-us/

Ph.D. in Artificial intelligence
September 2007 – February 2014

Azad University, Science and Research Branch, Tehran Iran

Thesis:	jobs interaction theory to train hyper-parameters of the cultural optimization algorithm.
Concentrations:	cultural optimization algorithm, neural network, multi-agent system, derivative-free learning algorithm, feature extraction.
Advisors:	professor **Mohammad Teshnehlab**.
GPA:	18.79 / 20.00

M.Sc in Artificial intelligence
September 2005 – September 2007

Azad University, Science and Research Branch, Tehran Iran

Thesis:	multi-objective optimization to train neural networks and neuro-fuzzy systems.
Concentrations:	multi-objective optimization, neural network and fuzzy system, combination of both derivative-base and derivative-free learning algorithms to prevent vanishing and exploding of gradient, and overfitting.
Advisors:	professor **Mohammad Teshnehlab**.
GPA:	18.08 / 20.00

B.Sc. in Computer Software Engineering
September 2001 – July 2005

Azad University, Iran

Thesis:	implementation of an automation system for the dairy industry.
Concentrations:	RUP methodology,data base management, SQL, object oriented programing, designing algorithm, data structure, Java, Visual C++.
GPA:	18.36 / 20.00

WORK EXPERIENCES

Research fellow in Data Science
Sep 2020 – Present

School of Ocean Sciences, Bangor Universirt , (Bangor, UK)
As a member of the iMarDIS project team, I work on a data infrastructure to bring together diverse ocean science datasets and make them available to various research and industrial partners within the offshore renewable and ocean sciences community. Visualising this data so that it would be informative and well exploited in the fields of education, research, and industry, along with investigating the interaction of AI and machine learning with the collected marine data are two parts of the project's intentions.

Machine Learning Expert and Data Scientist
Apr 2019 – Jun 2019

Pi Campus, (Rome, Italy)
The milestone of a particular project which has been defined and founded by Enel has been forecasting the anomalies based on sequences of events in the electrical grid. My proposal has been transforming it into the text anomaly detection problem. So I've worked on custom embedding method and deep neural network architectures.

Head of Department of AI
Oct 2017 – Apr 2019

Azad University,South Tehran Branch, (Tehran, Iran)
Develop and sustain appropriate structures for management, consultation, decision-making and communication with staff and students; Relationship with industry in order to obtain a research project; Ensure the highest levels of quality, integrity and ethics in all research undertaken; Deciding on which courses should be teaching in each semester and assign them to the teachers in line with faculty and university strategic plans and direction.

Assistant professor in AI Department
Feb 2014 – Sep 2020

Azad University, South Tehran Branch, (Tehran, Iran)
As a faculty member of the AI department, I develop new research projects, and cooperate in existing research projects, supervise PhD and MSc students research, and teach 14 hours per week. my activity area has been machine learning, deep learning, text mining, mining of massive data and probabilistic models.

Lecturer in Computer Eng. Department
Oct 2010 – Feb 2014

Azad University, South Tehran Branch, (Tehran, Iran)
I have taught bachelor students in computer software engineering to define and solve a project in an algorithmic framework. the algorithm concepts, programming, data structures, database management and software methodology(RUP, Agile) are part of the things that I have been teaching for more than 10 years.

Research Fellowship
Oct 2007 – Jun 2010

KNTU, ISLAB (Tehran, Iran)
I had been awarded two research fellowship from the Intelligence System Laboratory, KNTU, Tehran, Iran. The first research project was how to hybrid optimization algorithm to training fuzzy neural networks from 2007 till 2008. The second research project was investigating multi-objective optimization methods(2008-2010). professor Mohammad Teshnehlab led projects.

PEER-REVIEWED PUBLICATIONS(GOOGLE SCHOLAR)

- Solgi, M. & **Seydi, V.** ✉ (2022). Improving graph prototypical network using active learning. *Progress in Artificial Intelligence*, 11(4), 411-423.
- Gholamnezhad, P. , Broumandnia, A. ✉ & **Seydi, V.** (2022). A random forest-regression-based inverse-modeling evolutionary algorithm using uniform reference points. *ETRI Journal*, 44(5), 805-815.
- Hajibabaei, H., **Seydi, V.** ✉ & Koochari, A. (2022). Community detection in weighted networks using probabilistic generative model. *Journal of Intelligent Information Systems*, .
- HassanPour Zonoozi, M. & **Seydi, V.** ✉ (2022). A Survey on Adversarial Domain Adaptation. *Neural Processing Letters*, .
- Ilyas, C. M. A. ✉ , Rehm, M. , Nasrollahi, K. , Madadi, Y., Moeslund, T. B & **Seydi, V.** (2022). Deep transfer learning in human–robot interaction for cognitive and physical rehabilitation purposes. *Pattern Analysis and Applications*, 25(3), 653-677.
- Madadi, Y., **Seydi, V.** ✉ & Hosseini, R. (2022). Multi-source domain adaptation-based low-rank representation and correlation alignment. *International Journal of Computers and Applications*, 44(7), 670-677.
- Gholamnezhad, P., Broumandnia, A. ✉ & **Seydi, V.** (2022). A model-based many-objective evolutionary algorithm with multiple reference vectors. *Progress in Artificial Intelligence*, 11, 251-268.
- Falahiazar, A., Sharifi, A. ✉ & **Seydi, V.** (2022). An efficient spread-based evolutionary algorithm for solving dynamic multi-objective optimization problems. *Journal of Combinatorial Optimization*, 44, 794-849.
- Lotfi, S., Mirzarezaee M., & **Seydi, V.** (2021). Analysis of Structural Features in Rumor Conversations Detection in Twitter. *Signal and Data Processing*, 18(3), 45-64.
- Lotfi, S., Mirzarezaee, M. ✉ , Hosseinzadeh, M. & **Seydi, V.** (2021). Rumor conversations detection in twitter through extraction of structural features. *Information Technology and Management*, 22(4), 265-279.
- Madadi, Y. ✉ , **Seydi, V.**, Sun, J., Chaum, E. & Yousefi, S., (2021). Stacking Ensemble Learning in Deep Domain Adaptation for Ophthalmic Image Classification. *International Workshop on Ophthalmic Medical Image Analysis*, 168-178.
- Gholamnezhad, P., Broumandnia, A. ✉ & **Seydi, V.** (2021). An improved model-based evolutionary algorithm for multi-objective optimization. *Concurrency and Computation, Practice and Experience*, e6566.
- Falahiazar, L., **Seydi, V.** ✉ & Mirzarezaee, M. (2021). Sequential Multi-objective Genetic Algorithm. *Journal of AI and Data Mining*, 9(3), 369-381.
- Mollaahmadi Dehaqi, A., **Seydi, V.** ✉ & Madadi, Y. (2021). Adversarial Image Caption Generator Network. *SN Computer Science*, 2(3), 1-14.
- Lotfi, S., Mirzarezaee, M. ✉ , Hosseinzadeh, M. & **Seydi, V.** (2021). Detection of rumor conversations in Twitter using graph convolutional networks. *Applied Intelligence*, 1-14.
- Madadi, Y., **Seydi, V.** ✉ , Nasrollahi, K., Hosseini, R. & Moeslund, T. B. (2020). Deep visual unsupervised domain adaptation for classification tasks - a survey. *IET Image Processing*, 14(14).
- Falahiazar, A., Sharifi, A. ✉ & **Seydi, V.** (2020). Providing a Multi-Objective Optimization Algorithm Based on Probabilistic Crossover and Bi-Directional Mutation for Solving I-Beam De-

signing Problem. *IJournal of Operational Research In Its Applications (Applied Mathematics)*, 17(3).

- Madadi, Y., **Seydi, V.** ✉ & Hosseini, R. (2020). Deep Unsupervised Domain Adaptation for Image Classification via Low Rank Representation Learning. *Journal of Advances in Computer Research*, 11(1), 57-67.

- Nafari, M., **Seydi, V.** ✉ & Hosseinkhani, H. (2020). Using precision of users' reviews to improve the performance of matrix factorisation method in recommender systems. *International Journal of Society Systems Science*, 12(3), 185-197.

- Gholamnezhad, P., Broumandnia, A. ✉ & **Seydi, V.** (2020). An inverse model-based multiobjective estimation of distribution algorithm using Random-Forest variable importance methods. *Computational Intelligence*.

- Ebrahimi, A. ✉ , Dehdeleh, V., Boroumandnia, A. & **Seydi, V.** (2017). Improved particle swarm optimization through orthogonal experimental design. *2nd Conference on Swarm Intelligence and Evolutionary Computation (CSIEC)*, 153-158.

- **Seydi, V.** ✉ (2015). Adaptive fuzzy influence function for cultural algorithm. *SAI Intelligent Systems Conference (IntelliSys)*, 692-697.

- **Seydi, V.** ✉ , Teshnehlab, M. & Aliyari Shoordeli, M. (2015). Adaptive Rule-Base Influence Function Mechanism for Cultural Algorithm. *Journal of Advances in Computer Engineering and Technology*, 1(2), 29-38.

- **Seydi, V.** ✉ , Teshnehlab, M., Aliyari Shoordeli, M. & Ahmadieh Khanesar, M. (2013). Neural Networks for Normative Knowledge Source of Cultural Algorithm. *International Journal of Computational Intelligence Systems*.

- Moeini, Z., **Seydi, V.** ✉ & Teshnehlab, M (2010). Design an intelligent system to park the truck based on reinforcement learning and fuzzy logic. *10th Iranian Conference on Fuzzy Systems*.

- Chamaani, S., Mirtaheri, S. A., Teshnehlab, M., Aliyari Shoorehdeli, M. & **Seydi, V.** (2008). Modified Multi-objective Particle Swarm Optimization for electromagnetic absorber design. *Progress in Electromagnetics Research*, 79, 353-366.

- **Seydi, V.** ✉ , Ahmadieh Khanehsar, M. & Teshnehlab, M. (2007). Improving the non-dominate sorting genetic algorithm for multi-objective optimization. *International Conference on Computational Intelligence and Security Workshops (CISW)*, 89-92.

- **Seydi, V.** ✉ , Aliyari Shoordeli, M., Sharifi, A. & Teshnehlab, M. (2007). Multi objective optimization of ANFIS structure. *International Conference on Intelligent and Advanced Systems(ICIAS)*, 249-253.

- **Seydi, V.** ✉ , Aliyari Shoordeli, M. & Teshnehlab, M. (2007). Training ANFIS structure with modified PSO algorithm. *Mediterranean Conference on Control and Automation*, 1-6.

COURSES TAUGHT

PhD and master's degree : 2014-present

- Machine Learning
- Deep Learning
- Mining of Massive Data Sets
- Advanced Artificial Intelligence

Bachelor's degree : 2010-present

- Artificial Intelligence(Search, CSP, Adversarial Search, Logic Programming)
- Foundation of Programming(C / Python)
- Object-Oriented Programming(Java)
- formal language and automata theory

TECHNICAL SKILLS

Programming Languages:	Python, Java, JavaScript C, C++, MATLAB, R, ProLog.
Visualisation and developing:	Flask, React, D3, JavaScript, CSS, html
Databases Management:	SQL
Writing:	LaTeX, Microsoft Office, Markdown
Others:	AWS cloud platform, Git, GitHub, Software Development, RUP, Agile.

AWARDS

- **Rrsearch Fellowship in Data Science Award From BANGOR UNIVERSITY** 2020
  BANGOR, GWYNEDD, UK

- **merit-based scholarship form school of AI, Rome, Italy** 2019
  Pi Campus, Rome, Italy

- **Silver medal on Kaggle Competitions** 2017
  Zillow's Home Value Prediction, Seattle, USA
  I have achieved the rank of 71 among 3779 teams (top 2%)
  and got one silver medal.

- **Excellence in Teaching Award** 2014 – 2019
  Azad University, Tehran, Iran

- **Ph.D. scholarship** 2010
  Azad University, South Tehran Branch, Tehran, Iran

- **Research Fellowship** 2008
  KNTU, Intelligence System Lab, Tehran, Iran
  Multi-Objective Optimization

- **Research Fellowship** 2007
  KNTU, Intelligence System Lab, Tehran, Iran
  hybrid optimization methods to train neural network and fuzzy systems

- **Top Rank Graduated Student in B. Sc.** 2005

  Azad University, Iran

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