AMIR M. MIR

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CONTACT DETAIL

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GitHub profile: github.com/mir-am

Google Scholar profile: scholar.google.com/citations?user=IZB4GI8AAAAJ&hl

EDUCATION

Delft University of Technology Oct. 2019 - Present
PhD Candidate in Software Engineering
At the Software Analytics lab, I do research at the intersection of Machine Leaning and Programming Languages.

Islamic Azad University (North Tehran Branch) Feb. 2016 - Jan. 2019
M.Sc in Computer Engineering
Specialization in Artificial Intelligence & Machine Learning
Thesis subject: Robust Twin Support Vector Machine for Noisy Data **Thesis grade:** 4/4 (A+)
Overall **GPA**: 3.52 out of 4
Courses: Introduction to Artificial Intelligence, Artificial Neural Networks, Machine Learning, Statistical Pattern Recognition, Evolutionary Computation, Image Processing, Computer Vision, Natural Language Processing, Game Theory, Research Methodology

University of Tehran Oct. 2011 - Jul. 2015
B.Sc degree
Final project: Applications of Python Programming Language in Climatology
Courses: Discrete Mathematics, Data Structures, Algorithm Design, Digital Logic, Assembly Language, Operating Systems, Computer Architecture, Database Systems, Formal Languages and Automata, Design of Programming Languages

WORK EXPERIENCE

Iranian Research Institute for Information Science and Technology Jul. 2017 - Sep. 2019
Research Assistant at Machine Learning and Text Mining Lab *Tehran, Iran*

Achievements and Contributions

- Published two research papers in scholarly journals.
- Presented three research papers at international and national conferences.
- Designed and implemented machine learning algorithms in C++ and Python.
- Developed LightTwinSVM program and LIBTwinSVM library for the research and classification tasks.
- Taught students to do research and solve problems.

PUBLICATION

Journals

- Jalal A. Nasiri and Amir M. Mir. An enhanced knn-based twin support vector machine with stable learning rules. *Neural Computing and Applications*, Jan. 2020
- A. Mir and Jalal A. Nasiri. Knn-based least squares twin support vector machine for pattern classification. *Applied Intelligence*, 48(12):4551–4564, Dec. 2018
- Amir M. Mir and Jalal A. Nasiri. Lighttwinsvm: A simple and fast implementation of standard twin support vector machine classifier. *Journal of Open Source Software*, 4:1252, Mar. 2019
- Amir M Mir, Mahdi Rahbar, and Jalal A Nasiri. Libtwinsvm: A library for twin support vector machines. *arXiv preprint arXiv:2001.10073*, 2020
- Jalal A. Nasiri, A. Mir, and Somayeh Fatahi. Classification of learning styles using behavioral features and twin support vector machine. *Journal of Technology of Education*, November 2018 [**in Persian**]

Conferences

- Amir M Mir, Evaldas Latoskinas, Sebastian Proksch, and Georgios Gousios. Type4py: Deep similarity learning-based type inference for python. *arXiv preprint arXiv:2101.04470*, 2021
- A. M. Mir, E. Latoskinas, and G. Gousios. Manytypes4py: A benchmark python dataset for machine learning-based type inference. In *IEEE/ACM 18th International Conference on Mining Software Repositories (MSR)*, pages 585–589, May 2021
- A. Mir and Jalal A. Nasiri. Automatic opinion mining of movie reviews using robust twin support vector machine. In *4th Iranian Conference on Computational Linguistics*. Institute for Humanities and Cultural Studies, February 2018 [**in Persian**]
- A. Mir, Somayeh Fatahi, and Jalal A. Nasiri. Prediction of personality models in e-learning environments using twin support vector machine. In *2nd International Conference on Knowledge-Based Research in Computer Engineering and Information Technology*. Allameh Tabataba'i University, September 2017 [**in Persian**]
- A. Mir, Jalal A. Nasiri, and Somayeh Fatahi. Sentiment analysis of movie reviews using least squares twin support vector machine. In *1st Conference on Participles of Electrical and Computer Engineering*. Payame Noor University, July 2017 [**in Persian**]

TALKS

- ManyTypes4Py: A Benchmark Python Dataset for Machine Learning-based Type Inference, MSR'21 Conf., online (May 2021)
- Type4Py: Deep Similarity Learning-Based Type Inference for Python, SERG Lunch, TU Delft, online (May 2021)
- FASTEN: Intelligent Software Package Management, OW2con'2020, online (Jun. 2020)
- Deep Learning Type Inference for Dynamic Programming Languages, SERG Lunch, TU Delft, online (Apr. 2020)
- LIBTwinSVM: A Library for Twin Support Vector Machine, SERG Lunch, TU Delft, The Netherlands (Nov. 2019)

SOFTWARE PROJECTS

FASTEN https://www.fasten-project.eu/
Fine-Grained Analysis of Software Ecosystems as Networks

- Wrote four technical reports on the FASTEN Knoweldge Base, plug-ins, and vulnerability analyzer.
- Designed and developed dataflow plug-ins using Apache Kafka.
- Developed the FASTEN server which is a lightweight run time environment.
- Deployed the FASTEN plug-ins and services on Kubernetes clusters.
- Developed a web crawler for scraping coordinates of Maven packages.

LIBTwinSVM https://github.com/mir-am/LIBTwinSVM
A Library for Twin Support Vector Machines

- A simple and user-friendly Graphical User Interface
- Highly optimized implementation of standard TwinSVM and Least Squares TwinSVM classifiers.
- A Python application programming interface for employing TwinSVM estimators.
- A feature-rich visualization tool to show decision boundaries and geometrical interpretation of TwinSVMs.
- The best-fitted classifier can be saved on the disk.

LightTwinSVM https://github.com/mir-am/LightTwinSVM
A simple and fast implementation of standard TwinSVM classifer

- A simple console program for running TwinSVM classifier
- The clipDCD algorithm was improved and implemented in C++ for solving optimization problems of TwinSVM.
- Linear, RBF kernel and Rectangular are supported.
- Binary and Multi-class classification (One-vs-All & One-vs-One) are supported.
- It supports grid search over C and gamma parameters.
- Detailed classification result will be saved in a spreadsheet file.
- Used continuous integration services (Travis CI & AppVeyor) to build and test the program on Linux, OSX, and Windows systems.

TECHNICAL SKILLS

Research	Planning, Data Collection, Evaluating Sources, Critical Thinking, Documenting and Reporting
Programming Languages	Python, C, Modern C++
Software Development	Life Cycle, Clean Code, Debugging, Documentation, Continuous Integration, Unit Testing, Profiling, Maintenance
Machine Learning Libraries	Scikit-learn, PyTorch, Keras, TensorFlow, mlpack
Operating Systems	MacOS, Linux (Ubuntu), Windows
Databases	MySQL, Microsoft SQL
Source Control	Git, GitHub
Typesetting	LaTeX

RESEARCH INTERESTS

- Software Engineering
- Machine Learning
- Pattern Classification

LANGUAGES

- English
- Persian

- Natural Language Processing

CERTIFICATES

- **International School on Software Engineering (ISE 2020)**, the Free University of Bozen-Bolzano and the University of Innsbruck - Jul. 2020
- **Unix Tools: Data, Software and Production Engineering**, edX - Jun. 2020
- **Software Development Fundamentals**, Microsoft Virtual Academy - Mar. 2015
- **Introduction to Programming with Python**, Microsoft Virtual Academy - Mar. 2015

SERVICES

- **ICSE 2021**, Sub-reviewer, Bookable Events Coordinator, May 2021
- **ASE 2021**, Sub-reviewer
- **ICSE 2020**, Member of Virtualization and Live Streaming Team - Jul. 2020
- **FSE 2020**, Sub-reviewer