LEILA ZAHEDI

Website: https://solidlab.network/people
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EDUCATION

Ph.D. Candidate in Computer Science *Jan 2017 - present*
Knight Foundation School of Computing and Information Science
College of Engineering and Computing
Florida International University, Miami
Ph.D. Advisor: **Dr. M. Hadi Amini**
Dissertation Topic: "Efficient Optimization Algorithms for Automated Machine Learning: Theory and Application"

Recipient of:

- Outstanding Student Life Award, (Graduate Student Leader of the Year Award), 2022 by Division of Academic and Student Affairs, Florida International University
- Dissertation Year Fellowship (DYF), 2022 By University Graduate School
- Selected Participant in the ACM Student Research Competition (SRC) held at Tapia2021
- Richard Tapia Celebration (vTAPIA 2021) Scholarship, Funded by the National Science Foundation (NSF)

M.Sc. in Computer Science *Jan 2017 - 2021*
Knight Foundation School of Computing and Information Science
College of Engineering and Computing
Florida International University

Recipient of:

- Grace Hopper Celebration (vGHC20) Scholarship, By Florida International University
- Richard Tapia Celebration (vTAPIA20) Scholarship, Funded by The NSF
- Grace Hopper Celebration (GHC19) *Gold* Scholarship, By Anita Borg Institute
- Richard Tapia Celebration (TAPIA19) Scholarship, Funded by The NSF
- Grace Hopper Celebration (GHC17) Scholarship, By Anita Borg Institute

M.Sc. in Information Technology (Management Information System *Jan 2014 - 2016*
College of Information Technology Management
University of Science and Art (SAU), Yazd
M.Sc. Advisor: **Dr. Hossein Sayyadi**
Thesis Topic: "Customers Attitudes Toward Online Shopping (Case Study: Digikala)"

B.Sc. in Computer Engineering *Jan 2006 - 2010*
College of Engineering
School of Computer Engineering
University of Isfahan (UI), Isfahan
M.Sc. Advisor: **Dr. Ahmad R. Naghsh-Nilchi**

Thesis Topic: "White Blood Cell Segmentation Approach for Diagnostic Purposes"

HONORS AND RECOGNITION

1. Outstanding Student Life Award, (Graduate Student Leader of the Year) 2022 By Florida International University
2. IAAP Award, 2022 By Iranian American Academics and Professionals (IAAP) organization
3. Dissertation Year Fellowship (DYF), 2022 By University Graduate School, Florida International University
4. Selected Participant in the ACM Student Research Competition (SRC) held at Tapia2021
5. Richard Tapia Celebration (vTAPIA 2021) Scholarship, Funded by The National Science Foundation
6. Invited Speaker, 2021 National Science Foundation Re-Enter STEM through Emerging Technology (RESET) Conference
7. AWS Machine Learning Scholarship, 2021, Udacity Scholarship Team
8. Student Government Association (SGA) Graduate Student Scholarship, 2020 By Florida International University
9. Grace Hopper Celebration (vGHC20) Scholarship, By Florida International University
10. ACM SIGKDD 2020 Student Award
11. Richard Tapia Celebration (vTAPIA20) Scholarship, Funded by The NSF
12. Student Government Association at Florida International University, Service and dedication recognition award as a graduate senator, 2019
13. Grace Hopper Celebration (GHC19) *Gold* Scholarship, By Anita Borg Institute
14. Richard Tapia Celebration (TAPIA19) Scholarship, Funded by The NSF
15. Grace Hopper Celebration (GHC17) Scholarship, By Anita Borg Institute
16. Graduate Assistantship, Florida International University, from Spring 2017 through 2022

HIGHLIGHTS

Teaching Assistant – Florida International University
Courses: Introduction to Microcomputers, Introduction to Computer Data Analysis, Theory of Algorithms, Software Engineering, Vertical Integrated Projects (VIP), Undergrad Senior Projects, Programming II, Introduction to Machine Learning, Linear Algebra (Applied Linear Structures), Applied Linear Structure for Computing

Teaching Assistant – Yazd University of Science and Art
Courses: Introduction to data mining

Teaching Assistant – University of Isfahan
Courses: Internet engineering, Electric circuits I

RESEARCH INTERESTS

• **Automated Machine Learning**
Feature Selection Optimization, hyper-parameter Optimization, AutoML frameworks.

• **Data Science, Machine Learning and Data Mining**
Feature engineering, pre-processing, regression, classification, deep learning, data analytic

• **Educational Data Science**
Developing machine learning models for exploring the increasingly large-scale educational dataset and using those models to better understand students, and the settings which they learn in.

SELECTED PROJECTS (DURING PHD)

HPO-FSO (2021-2022): Developed an automated machine learning (AutoML) framework using evolutionary optimization algorithms.

A2BCF (2021-2022): Developed a novel automated feature selection for structured datasets.

OptABC (2021-2022): Developed a novel automated hyper-parameter tuning algorithm for for tuning hyper-parameters of machine learning algorithms.

Predict Computing Persistence Leveraging ML Techniques (2019-2021): Utilized machine learning algorithms (Random Forest in scikit-learn) to evaluate feature importance on academic outcomes in computing Applying comparative machine learning algorithms (Naive Bayes, Support Vector Machine, Random Forest, XGboost, KNN, Logistic regression) to predict students' success in computing fields from 20 universities across the U.S (`https://engineering.purdue.edu/MIDFIELD`)

Gamification (2018-2019): Implemented statistical modeling techniques to explore the impacts of gamification on learners' performance in online learning environments.

TECHNICAL STRENGTHS

Programming language
Python, R, MySQL, PostgreSQL, C#

Database Management Systems
Microsoft SQL Server, MySQL

Machine Learning Skills
Optimization, Automated Hyperparameter Tuning, Automated Feature Selection, Random Forest, Support Vector Machine, Regression, Naive Bayes, Decision Tree, XGBoost, Clustering, Classification, Feature Engineering, RNN, CNN

Frameworks
Scikit-learn, Pandas, NumPy, SciPy, TensorFlow, Matplotlib, ggplot, Seaborn

Other Apps
AWS, HPC, Scrum and Agile Methodologies, Linux, Github, git, MATLAB, LATEX, Jupyter NoteBook, Spyder

WORK EXPERIENCE

Florida International University Jan 2021 - Present
Research/Teaching Assistant

Knight Foundation School of Computing and Information Science
Sustainability, **O**ptimization, and **L**earning for **I**nter**D**ependent networks laboratory (**solid** lab)
Conduct research at the intersection of machine learning and optimization under supervision of Dr. M. Hadi Amini

NDC lab at Florida International University November 2020- March 2021
Data Scientist Intern

Understanding of the factors that predict psychiatric disorders, and specifically social anxiety using machine learning techniques

BestIT 2013-2015
Data Analyst

Website performance analysis to drive customer acquisition and retention
Search Engine Optimization

SELECTED PUBLICATIONS (DURING PHD AT FIU:)

1. Lord, S. M., Ohland, M. W., Orr, M. K., Layton, R. A., Long, R. A., Brawner, C. E., ... & **Leila Zahedi** (2022). MIDFIELD: A Resource for Longitudinal Student Record Research. IEEE Transactions on Education.
2. **Leila Zahedi**, Mohammadi, F. G., & M. Hadi Amini (2021). OptABC: an Optimal Hyperparameter Tuning Approach for Machine Learning Algorithms. IEEE International Conference on Machine Learning and Applications (ICMLA21).
3. **Leila Zahedi**, Mohammadi, F. G., Rezapour, S., Ohland, M. W., & M. Hadi Amini (2021). Search algorithms for automated hyper-parameter tuning. The 17th International Conference on Data Science (ICDATA'21).
4. **Leila Zahedi**, Batten, J., Ross, M., Potvin, G., Damas, S., Clarke, P., & Davis, D. (2021). Gamification in education: a mixed-methods study of gender on computer science students' academic performance and identity development. Journal of Computing in Higher Education (JCHE).
5. Zhu, J., **Leila Zahedi**, & Ross, M. S. (2021, July). Evaluating Publications' Keywords in Computer Science Education Research: A Bibliometric NLP Approach. In 2021 ASEE Virtual Annual Conference Content Access.
6. **Leila Zahedi**, Lunn, S. J., Pouyanfar, S., Ross, M. S., & Ohland, M. W. (2020, June), Leveraging Machine Learning Techniques to Analyze Computing Persistence in Undergraduate Programs Paper presented at 2020 ASEE Virtual Annual Conference Content Access.
7. **Leila Zahedi**, Ebrahiminejad, H., Ross, M. S., Ohland, M. W., & Lunn, S. J. (2021, January). Multi-institution study of student demographics and stickiness of computing majors in the USA. In 2021 CoNECD.
8. Lunn, S., **Leila Zahedi**, Ross, M., & Ohland, M. (2021). Exploration of Intersectionality and Computer Science Demographics: Understanding the Historical Context of Shifts in Participation. ACM Transactions on Computing Education (TOCE), 21(2), 1-30.
9. Perez, D., **Leila Zahedi**, Ross, M., Zhu, J., Vinci-Cannava, T., Kramer, L., & Charters, M. (2020, October). WIP: An exploration into the muddiest points and self-efficacy of students in introductory computer science courses. In 2020 IEEE Frontiers in Education Conference (FIE) (pp. 1-5). IEEE.
10. **Leila Zahedi** (2019, June). Implications of Gamification in Learning Environments on Computer Science Students: A Comprehensive Study. In 126th Annual Conference and Exposition of American Society for Engineering Education (ASEE).
11. EbrahimiNejad, H., Al Yagoub, H. A., Ricco, G. D., Ohland, M. W., & **Leila Zahedi** (2019, October). Pathways and outcomes of rural students in engineering. In 2019 IEEE Frontiers in Education Conference (FIE) (pp. 1-6). IEEE.
12. Surakanti, S. R., Emami, M., & **Leila Zahedi** (2019, December). Compression of speech signals using Kronecker enhanced compressive sensing method. In 2019 5th Iranian Conference on Signal Processing and Intelligent Systems (ICSPIS) (pp. 1-6). IEEE.

SELECTED PRESENTATIONS (DURING PHD AT FIU:)

1. **Leila Zahedi**, M. Hadi Amini (2021). Hyperparameter Optimization for Improving Educational Decision Making. Presented at Grace Hopper Celebration of Women in Computer Science (GHC21) Conference.
2. **Leila Zahedi**, M. Hadi Amini (2021). Hyper-Parameter Optimization of Machine Learning Algorithms. Presented at ACM Richard Tapia Conference.
3. Lunn, S., **Leila Zahedi**, Ross, M. S., Ohland, M. W. (2021, March). Exploration of intersectionality and computer science demographics: Understanding the phenomena related to historical shifts, presented at the NSF Re-Enter STEM Through Emerging Technology (RESET) Conf.
4. **Leila Zahedi**, Lunn, S., & Ross (2020). A Comparative Analysis of Machine Learning Techniques for Predicting Student Persistence in Computing Programs. Presented at ACM Richard Tapia (TAPIA20) Conference.
5. **Leila Zahedi**, Batten, J., & Ross (2019). Implications of Gamification on Computer Science Women on Engagement. Association for Computing Machinery, Special Interest Group on Computer Science Education (ACM SIGCSE) conference.
6. **Leila Zahedi**, Batten, J., & Ross (2019). Implications of Gamification on Women Students' Performance in Computer Science. Presented at ACM Richard Tapia (TAPIA19) Conference.
7. **Leila Zahedi**, Batten, J., & Ross (2019). Assessing the Effects of Gamification on CS students: A Gender Study on Performance. Presented at Grace Hopper Celebration (GHC19) Conference.

PROFESSIONAL ACTIVITIES (DURING PHD AT FIU)

Chair Graduate and Professional Student Committee (GPSC), Florida International University
Graduate Senator Student Government Association (SGA), Florida International University
Seminar Coordinator Computer Science Graduate Student Association (CSGSA), Florida International University
Coordinator, Graduate Professional Student Committee (GPSC), Florida International University
Session Chair, Graduate Student Appreciation Week (GSAW), Florida International University

SERVICE (DURING PHD AT FIU)

Journal Reviewer:
Scientific-Reports Nature
Journal of Informatics in Medicine Unlocked
Journal of PeerJ Computer Science
Journal of Tissue and Cell
Journal of IEEE Transaction on Multimedia
Conference Reviewer: American Socienty for Engineering Education (ASEE)
Vice President: Iranian Student Organization, Florida International University
Event Coordinator, Iranian Student Organization, Florida International University