Amir Elmishali, Ph.D

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AI and data science researcher with 7+ years of experience researching, developing and advising on AI projects. Ph.D. in software and systems engineering with expertise in machine learning techniques for software engineering. I seek a position as a data scientist to grow my career further.

Education

Ph.D., Ben-Gurion University of the Negev, Israel *2016 - 2021*
Department of Software and Information Systems Engineering
Dissertation topic: Artificial Intelligence Techniques for Automated Bug Prediction and Detection.
Supervised by Professor Meir Kalech and Professor Roni Stern.

M.Sc, Ben-Gurion University of the Negev, Israel *2014 - 2016*
Department of Software and Information Systems Engineering GPA: 93.06/100
Supervised by Professor Meir Kalech and Professor Roni Stern.
Member of ”Meitar” Excellence Program, started M.Sc during B.Sc.

B.Sc, Ben-Gurion University of the Negev, Israel *2011 - 2015*
Department of Software Engineering. Outstanding Performance Award. GPA: 89.05/100

Experience

Postdoctoral Researcher 2021
Anomaly Detection and Diagnosis lab, Ben-Gurion University of the Negev
I researched and supervised students in AI and machine learning projects for software engineering.

Ph.D Summer Internship 2020
Facebook
Research and implementation of a feature recommendation system for data scientists at Facebook.

Teaching Assistant 2017-2021
Ben-Gurion University
Crafted and lectured on content in courses for undergraduate software engineering students: ”Introduction to Software Engineering” (2020) and ”Workshop on Software Engineering Project” (2021). Supervising projects in the courses ”Fault Diagnosis in Artificial Intelligence” (2017-2021) and ”Research Skills” (2018-2021).

Research Assistance 2013 - 2014
Anomaly Detection and Diagnosis lab, Ben-Gurion University of the Negev
Research and implementation of software defect prediction models based on repository mining.

Military Service

R&D Software Engineer 2015 - 2019
8200 Intelligence Unit, IDF
Development of C++ and Python platform for cyber-security applications for Windows.

Skills

Data Science: Data exploration, Research, Data pre-processing, Feature engineering, Classification, Clustering, Deep learning, Evaluation metrics, Visualization, Statistics.
Coding: Python (Scikit-Learn, Pandas, NumPy, Matplotlib, PyTorch, TensorFlow), Java, C++, SQL, Environments (Pycharm, Jupyter Notebook, IPython), OOP, Design patterns, Git, CI/CD.
Personal: Teamwork, Time management, Project Lead, Agile, Presentation.

Awards and Honors

IDF‘s outstanding scientist 2018
Recommended by commander of the Israeli intelligence corps, IDF
B.Sc outstanding performance award 2015

Publications

Journal Articles

1. **Elmishali, Amir**, Stern Roni, and Kalech Meir. ”Diagnosing Software System Exploits.” IEEE Intelligent Systems (2020).
   Impact factor of IEEE Intelligent Systems 2020 is: 3.405, 53/140, Q2
2. **Elmishali, Amir**, Stern Roni, and Kalech Meir. ”An Artificial Intelligence paradigm for troubleshooting software bugs.” Engineering Applications of Artificial Intelligence 69 (2018).
   Impact factor of Engineering Applications of Artificial Intelligence-18 is: 3.526, 15/88, Q1

Conference Proceedings

1. **Elmishali, Amir**, Sotto-Mayor Bruno, Roshanski Inbal, Sultan Amit and Kalech Meir. ”BEIRUT: Repository Mining for Defect Prediction.” IEEE 32st International Symposium on Software Reliability Engineering (ISSRE) 2021.
   Rank: A
2. Hershkovich Eran, Abreu Rui, Stern Roni and **Elmishali, Amir**. ”Prioritized Test Generation Guided by Software Fault Prediction”. IEEE International Conference on Software Testing, Verification and Validation (ICST) 2021.
   Rank: A
3. **Elmishali, Amir**, Stern Roni, and Kalech Meir. ”DeBGUer: A Tool for Bug Prediction and Diagnosis.” Proceedings of the AAAI Conference on Artificial Intelligence. Vol. 33. 2019.
   Rank: A*
4. **Elmishali, Amir**, Stern Roni, and Kalech Meir. ”Data-augmented Software Diagnosis.” Twenty-Eighth IAAI Conference. 2016.
   Rank: A*

Patents

1. Kalech, Meir, Ron Stern, and **Elmishali, Amir**. ”Data-augmented software diagnosis method and a diagnoser therefor.” U.S. Patent No. 10,437,702. 8 Oct. 2019.

Workshop Articles

1. **Elmishali, Amir** and Kalech Meir. ”Issue-Driven Features for Software Fault Prediction” . 32nd International Workshop on the Principles of Diagnosis (DX’21)
2. Mordoch Argaman, Natan Avraham **Elmishali, Amir**, and Kalech Meir. ”Bugs Assignment for Workload Distribution”. 32nd International Workshop on the Principles of Diagnosis (DX’21)
3. Sotto-Mayor Bruno, **Elmishali, Amir**, Kalech Meir and Abreu Rui. ”Exploring Designite for Smell-Based Defect Prediction”. 31st International Workshop on the Principles of Diagnosis (DX’20)
4. Hershkovich Eran, Abreu Rui, Stern Roni and **Elmishali, Amir**. ”Prediction-Guided Software Test Generation”. 30tn International Workshop on the Principles of Diagnosis (DX’19).
5. Roshanski Inbal, Kalech Meir, Stern Roni and **Elmishali, Amir**. ”The Cold Start Problem in Software Fault Prediction”. 30tn International Workshop on the Principles of Diagnosis (DX’19).
6. **Elmishali, Amir**, Stern Roni, and Kalech Meir. ”DeBGUer: A Tool for Bug Prediction and Diagnosis.” 29th International Workshop on the Principles of Diagnosis (DX’18).
7. **Elmishali, Amir**, Stern Roni, and Kalech Meir. ”Diagnosing System Exploits.” 28th International Workshop on the Principles of Diagnosis (DX’17).
8. **Elmishali, Amir**, Stern Roni, and Kalech Meir. ”Data-augmented Software Diagnosis.”26th International Workshop on the Principles of Diagnosis (DX’15).