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 course "Fault Diagnosis in Artificial Intelligence" (2017-2021) Supervising research students in the course "Research Skills" (2018-2021).

Research Assistant   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** and Kalech Meir. "Issue-Driven Features for Software Fault Prediction." Information and Software Technology (2022).
   Impact factor of Information and Software Technology 2021 is: 3.862, 21/110, Q1

2. Sotto-Mayor Bruno, **Elmishali Amir**, Kalech Meir and Abreu Rui. "Exploring Design smells for smell-based defect prediction." Engineering Applications of Artificial Intelligence 115 (2022).
   Impact factor of Engineering Applications of Artificial Intelligence-21 is: 7 802, 27/144, Q1

3. **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

4. **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. Roshanski Inbal, Kalech Meir and **Elmishali Amir**. "OSCLUS: Combining Clustering and Component-Sensitive Algorithm for Cross-Project Software Fault Prediction" . 33rd International Workshop on the Principles of Diagnosis (DX'22)

2. Cohen Shir, **Elmishali Amir** and Kalech Meir. "SeC-GAN: Generative Adversarial Network for Just-in-Time Defect Prediction" . 33rd International Workshop on the Principles of Diagnosis (DX'22)

3. **Elmishali Amir** and Kalech Meir. "Issue-Driven Features for Software Fault Prediction" . 32nd International Workshop on the Principles of Diagnosis (DX'21)

4. Mordoch Argaman, Natan Avraham **Elmishali Amir**, and Kalech Meir. "Bugs Assignment for Workload Distribution". 32nd International Workshop on the Principles of Diagnosis (DX'21)

5. 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)

6. Hershkovich Eran, Abreu Rui, Stern Roni and **Elmishali Amir**. "Prediction-Guided Software Test Generation". 30tn International Workshop on the Principles of Diagnosis (DX'19).

7. 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).

8. **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).

9. **Elmishali Amir**, Stern Roni, and Kalech Meir. "Diagnosing System Exploits." 28th International Workshop on the Principles of Diagnosis (DX'17).

10. **Elmishali Amir**, Stern Roni, and Kalech Meir. "Data-augmented Software Diagnosis."26th International Workshop on the Principles of Diagnosis (DX'15).