Mordecai Weisel

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Work Experience

Adler Lab Hebrew University, Jerusalem, Israel

Research Associate (March 2025 – Present)

- Developed a Python package for inferring latent environmental variables from single-cell gene expression data, converting and enhancing a core method from a proprietary language to operate generically across diverse file inputs. Utilized libraries including Pandas, Scipy, Scikit-learn, and Matplotlib in the development process
- Addressed a key research challenge posed by the lack of ground truth by designing and implementing a novel validation strategy, leveraging gene z-scores to create a proxy ground truth and employing Mean Squared Error (MSE) for algorithmic model evaluation
- Applied statistical methods to analyze single-cell gene expression patterns with the objective of identifying new genes that align with core algorithmic findings

CBA Lab Georgia Institute of Technology, Atlanta, Georgia

Research Associate (January 2024 –December 2024)

- Primary researcher on Human Activity Recognition (HAR) research project; formulated problem statement and goals, conducted literature review, defined timeline and milestones and main developer on implementation
- Developed ML pipeline to clean and process RF signals (Wi-Fi) for pose estimation, achieving greater than 84% accuracy using both Gradient Boosting and Neural Networks (U-Net)
- Owned end to end implementation of experiment at multiple layers of the stack, including collection of CSI data on ESP32 microcontrollers, Android app development to label and store data, and ML pipeline integration with Android app for real-time inference

Nasdaq (formerly Adenza), Jerusalem, Israel

Machine Learning Engineer (February 2019 – March 2024)

- Developed machine learning algorithms to identify anomalies in categorical and mixed data sets using a semi-supervised architecture of statistical and deep learning models; optimized model to derive Shapley values to add interpretability for end users
- Conducted research of NLP techniques to automatically update configuration files based on changes in requirements written in natural language; designed experiments to test various preprocessing and neural network architectures, achieving greater than 90% accuracy
- Reduced risk calculation processing time by over 95% by developing a machine learning pipeline to predict results of calculation using a regression model that achieved a R2 score of greater than .85
- Designed anomaly detection product from scratch, engineering stack architecture, machine learning pipeline integration, and initial UI designs; oversaw project through to initial production deployment
- Worked with CTO and senior product managers to cultivate a backlog of high potential products, researched and developed prototypes to test feasibility; graduated 4 prototypes to client POCs

Skills

- Python, Java
- NumPy, Pandas
- Scikit-Learn, PyTorch, Keras
- SQL
- Signal Processing
- Deep Learning
- Machine Learning
- Reinforcement Learning
- English (Native)
- Hebrew (professional proficiency)

Education

Georgia Institute of Technology, Atlanta, GA

Master of Science in Computer Science, December 2024
Specialization: Machine Learning

Yeshiva University, New York, NY
Master of Arts in Bible, September 2014
Bachelor of Arts in Philosophy, January 2013