ROEI SHEMESH

AI/ML Engineer | Machine Learning Engineer | Software Developer

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PROFESSIONAL SUMMARY

Passionate and results-driven AI/ML Engineer with a B.Sc. in Electrical Engineering from the Technion (Honors, GPA 90). Proven expertise in optimizing complex neural networks for specialized hardware, building scalable data pipelines, and developing production-ready AI solutions. Currently focused on building advanced financial trading platforms that combine machine learning, big data, and real-time analytics. Known for bridging software innovation with hardware constraints and turning ambitious ideas into high-impact systems.

TECHNICAL SKILLS

- **Machine Learning & AI:** Deep Learning, Neural Network Optimization, Forecasting Models, Ensemble Methods, Statistical Validation, Computer Vision
- **Programming Languages:** Python (Expert), Java, C, C++, MATLAB, SQL, CMake
- **ML/DL Frameworks:** TensorFlow, Keras, PyTorch, Scikit-learn, Pandas, NumPy
- **Data & Visualization:** ETL/ELT Pipelines, Big Data Analytics, Matplotlib, Seaborn
- **Other Expertise:** Hardware-Software Co-design, Automation Frameworks, Parallel Programming, Version Control (Git)

PROFESSIONAL EXPERIENCE

Independent Software Developer (Freelance & Consulting) | Self-Employed | 2021 – Present

- Architected and developed a comprehensive stock market trading platform from the ground up, featuring custom machine learning models for trend prediction, risk assessment, and automated trading strategies.
- Built end-to-end data pipelines and real-time visualization tools to process and analyze large-scale financial datasets with high accuracy and low latency.
- Delivered machine learning consulting and hands-on training to clients, helping teams successfully integrate AI solutions into their products and workflows.
- Iterated through multiple versions of the trading system, continuously improving model performance and system robustness based on live market data and user feedback.

Machine Learning Engineer | CEVA | Herzliya | 2018 – 2022

- Optimized client neural network models layer-by-layer for efficient vectorized execution on CEVA's DSP hardware, delivering significant improvements in inference speed and power efficiency.
- Collaborated closely with hardware engineering teams to design and implement new custom instructions for specialized neural network operations that standard frameworks could not handle.
- Conducted forward-looking research on emerging AI workloads and future technology trends to define hardware requirements and guide next-generation chip architecture decisions.
- Translated complex client requirements into optimized, production-ready machine learning solutions while ensuring seamless integration with existing hardware platforms.

Software Engineer – DevOps & Automation | Dell EMC (ScaleIO) | Haifa | 2017 – 2018

- Designed and implemented automation frameworks and tools that streamlined engineering workflows, significantly improving software delivery speed and resource utilization.
- Developed parallel processing optimizations and predictive analytics solutions that enhanced overall system reliability and scalability.

Hardware Engineer (Board Design) | MARVEL Technologies | Yokneam | 2016 – 2017

- Designed and validated hardware boards during early-career role while completing degree.

EDUCATION

B.Sc. Electrical Engineering (Honors) | Technion – Israel Institute of Technology, Haifa | 2013 – 2017

GPA: 90 | Graduated with Honors | Completed 4 major projects (instead of the standard 2) focusing on AI, algorithms, and computer vision

SELECTED PROJECTS

- **Stock Market Trading Platform (2021–Present):** Full-stack, ML-powered trading system with predictive analytics, automated strategies, and real-time big data processing. Developed through multiple production iterations.
- **Housing Market Prediction Model:** Built machine learning model to forecast real estate price movements, supply/demand dynamics, and key economic indicators.
- **3D Face Reconstruction from 2D Images:** Computer vision pipeline that transforms a single 2D photo into a high-precision 3D-printable face model.
- **Load Balancing Algorithm Optimization:** Compared and improved server load balancing algorithms for cloud environments, identifying and resolving performance bottlenecks.
- **Cryptocurrency E-commerce Platform:** Developed online marketplace supporting cryptocurrency payments with mechanisms to handle high market volatility.

LANGUAGES

Hebrew (Native) • English (Fluent) • Python (Expert)