Michael Shalyt

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Experience

2023 – present **Associate Researcher at The Technion - Israel Institute of Technology**. Leading the Ramanujan Machine Team, I drive initiatives that aim to create *AI for scientific discovery* and develop cutting-edge algorithms to uncover new mathematical insights.

- Manage a diverse group of 9 researchers, engineers, and mathematicians - from undergraduates to postdoctoral fellows.
- Set research strategy and define new project directions.
- Develop, write, and submit grant applications and lead our AI conference pipeline.
- Contribute to our flagship Python library by designing its architecture and prototyping innovative capabilities.

2021 – present **Game Economy & Systems Expert**. Freelance *hands-on* game designer with experience spanning from early conceptualization to live-ops and *data-driven* player behavior analysis.
Specialize in mathematical modeling, progression and balance simulations, market research, and reverse-engineering game design.
Consulted for:

- PlayGen: A startup using AI to dynamically optimize game progression, economy, and balance.
- Zarzilla: A studio developing social card games.
- Xternity: A startup creating tools for Web3 games.
- Chaos Sun: A 4X MMO featuring NFT-based characters and a crypto-economy.

2021 – 2024 **Game Systems Designer at Redemption Games**. Led *systems and economy* design for "Crushers!" as the *inaugural* team member.

- Guided the project from an early proof-of-concept to the studio's flagship game.
- Developed the first prototype in Python and engineered the core gameplay mechanics that fundamentally shaped the player experience.
- Crafted layered progression systems - incorporating both immediate progress and long-term meta-progression - to boost engagement and retention.
- Devised analytical models to assess player-cohort behavior, driving targeted design improvements.

2020 – 2023 **Head of Program & Algorithms TL at Cycognito**. Operating as a *startup-within-a-startup*, *founded* the algorithms team and the "autonomous attack surface mapping" program. We used *data fusion and AI* to discover and attribute digital assets for our customers automatically - gradually removing the need for humans in the loop.

- Grew to 9 group members, across 4 departments (algorithms, backend, app, analysts).

- Held multiple roles: managed day to day operations as the project manager, data and AI applications as algorithms TL, vision and alignment to Cycognito's strategy as the product/program manager.
- Went from 0 to multiple integrated products in production.

2018 – 2019 **Co-Founder & CEO at Evo.Do**. We created AI that automated the QA and validation process of complex or rapidly changing interactive software (games, rich apps, VR) - using *cutting edge Deep Reinforcement Learning* techniques.

- Went from 0 to MVP (based on patent-pending algorithms), pilot customers and seed investment.
- Evo.Do was part of Y Combinator (AI batch of W19) and the inaugural batch of Xcellerator (led by TAU Ventures).

2016 – 2018 **Co-Founder, CEO & VP Product at Aperio Systems**. We created algorithms to validate physical sensor data in heavy manufacturing facilities - against data malfunctions and malicious tampering - using *signal processing* and *machine learning*.

- Went from an idea to a deployed product, first customers, millions of dollars raised.
- Received multiple awards, including Gartner's 2017 "cool vendor" choice, CDM 2017 infosec award, won the ESB and Free Electrons pitch competitions and others.

2016 **Research Scholar** Prof. Dan Ariely's lab. Working with fintech startups to *apply Behavioral Economics* research to real-world challenges. San Francisco, USA.

2014 – 2015 **Malware Research Team Leader at Check Point**. Managing 8 researchers (2 abroad) working on PC and Android *malware analysis, reverse engineering* and *ML-for-cyber*.

2012 – 2014 **Research Team Leader at IDF (unit 8200)**. Managing a team of 8 researchers working mostly on "secret needle in a hay stack", *data extraction* and *anomaly detection* projects.

2010 – 2012 **Researcher at IDF (unit 8200)**. Software patterns investigation and *reverse engineering*, *vulnerability detection*, product integration and support, expert consulting and research project management.

2005 **CT sensors R&D team at GE Healthcare**. Comparing X-ray *sensor response statistical models*, analytically and experimentally.

2004 – present Represented Israel at the 36th *International Physics Olympiad* (IPHO) - awarded a Bronze medal. Stayed on as part of a team of guides training the future Israeli physics teams. Was involved in the 12th Asian Physics Olympiad (2011) and 50th IPHO (2019).

Education

2009 – 2013 **MSc in Quantum Computing at the Technion**. Researched noise cancelation in open quantum systems using their statistical properties and optical controls. Co-supervised by Prof. J. Avron (Technion, Israel) and Prof. A. Retzker (Ulm, Germany). Results published. *GPA: 94%*.

2005 – 2009 **Bachelor's degrees in Physics and Electrical Engineering at the Technion**. Majored in electro-optics and signal processing. Was part of the elite army program "Psagot" and a member of the *Technion Excellence program* for exceptional undergraduate students. Received 4 presidential excellence awards and the Intel award. Conducted research in the field of theoretical quantum optics - results published. *GPA: 97%*.

2005 Graduated from the gifted children program at Leo-Beck High School, Haifa, excelling as the *top student in Physics*.

Other skills

- Languages: Python, Mathematica, Matlab, C, JAVA (Android native), Scheme, Assembly, Actionscript, Javascript, Pascal, Hebrew, English and Russian.
- Public speaking. Building and giving both technical and entertaining talks.
- "Breaking" systems: finding winning strategies and loopholes.