

Anat Etzion-Fuchs, PhD



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Herzliya

Experienced data scientist, showcasing a robust portfolio in applying statistical and machine learning models to large-scale datasets. Adept at translating experimental challenges into data-driven solutions and aligning multidisciplinary teams toward impactful strategic outcomes. Passionate about the intersection of data science and biology.

WORK EXPERIENCE

- 06/2024- **Pheno.AI**, Tel Aviv, Israel
[01/25- Data Science Team Lead](#)
- Managing the Omics Data Science team, responsible for designing, collecting, and analyzing large-scale molecular datasets from [The Human Phenotype Project](#).
- [06/24-12/24 Senior Data Scientist](#)
- Designing and analyzing multi-omics data targeted at precision medicine challenges.
- 2022-2024 **Eleven Therapeutics**, Tel Aviv, Israel
[Senior Data Scientist and Data Infrastructure Tech Lead](#)
- Led and implemented multiple data science projects, from ideation and design to full execution.
 - Developed statistical and machine learning models for analyzing massive datasets (on AWS), including high throughput NGS sequencing data, nucleic acids chemistry, and biological assays.
 - Revamped and spearheaded the company's data workflow processes, orchestrating cross-functional team efforts across three international sites (IL, UK, and US).
 - Deployed and optimized deep learning techniques from SOTA publications.
- 2015-2022 **Princeton University**, Princeton, NJ
[Assistant Instructor and Graduate Research Assistant](#)
- Developed machine learning and statistical models for analyzing large-scale proteomic data, predicting *de-novo* interaction-sites using classical supervised ML and pre-trained NN.
 - Instructor for *Introduction to Genomics and Computational Molecular Biology* (COS 551).
- 2011-2014 **Qualcomm Incorporated**, Haifa, Israel
[2013-2014 Software Engineer](#)
- Designed, implemented, and tested Android device drivers for smart TVs (C and C++).
- [2011-2013 Software Engineer Intern](#)
- Developed Windows/.NET drivers for high-speed wireless chipsets using agile methodology (C#).
- 2005-2008 **Mandatory Military Service in the Israeli Intelligence Corps (8200)**, Tel-Aviv, Israel
 Served in an elite intelligence center (Haman-Talpiot/Aham Sh'hakim).
[2007-2008 Foreign Affairs Manager](#)
- Led the division's foreign affairs, directed the strategy of ongoing collaborations with foreign countries, and identified key opportunities and obstacles for joint international efforts.
- [2005-2008 Data Analyst](#)
- Analyzed data to supply actionable insights using various programming tools (including Python, C-Shell, VBA, SQL), and statistical approaches. Awarded for accelerating the project's outcomes.

EDUCATION

- 2015-2022 **Ph.D. in Quantitative and Computational Biology | Princeton University**
[Graduate certificate in Statistics and Machine learning](#)
- Thesis title: Predicting Protein Interaction Sites Through Machine Learning and Data Aggregation
 - GPA: 3.95/4.00 | Advisor: Prof. Mona Singh
- 2008-2013 **B.Sc. in Computer Science (summa cum laude) | Technion - Israel Institute of Technology**
[GPA: 92.5/100, ranked #1 in the Bioinformatics track and #12/224 in the CS department](#)
- Selected to the first class of the [Lapidim excellence program](#) (top 5 students of each incoming CS class)

AWARDS AND HONORS

- 2019 **Women in Machine Learning (WiML, co-located with NeurIPS) travel grant**
Recipient of the [WiML workshop](#) travel grant, for poster presenters and reviewers
- 2017 **Princeton Research Day, Best Poster award (1st place) for graduate/post-doctoral track**
Princeton's biggest annual research presentation to the general community.
- 2012 **Google Anita Borg Memorial scholarship EMEA**
Recipient of the [Google Anita Borg Scholarship](#) for leading women in computer science
- 2011-2012 **SAMBA scholarship (contributed by Mellanox Technologies) & Lapidim scholarship**
Technion CS prize for academic excellence ([Speaker on behalf of the scholarship recipients](#))
- 2009-2012 **President's list (4 semesters) & Dean's list (3 semesters) for excellent students**
Top 3% & top 15% in each department, respectively
- 2007 **Military "Personal Award of Excellence" (Colonel-rank award)**
For contributing to the center's work and the advancement of the intelligence service and security

SELECTED PUBLICATIONS AND PRESENTATIONS

Journals

- 2021 A Etzion-Fuchs, DA. Todd, and M Singh. "dSPRINT: predicting DNA, RNA, ion, peptide and small molecule interaction sites within protein domains", *Nucleic Acids Research* (2021): 49(13): e78

Invited talks

- 06/2023 "TERÅ: A High-Throughput AI-Powered Platform for Optimizing the Durability of RNA Therapeutics"
Oral presentation, Israeli meeting on RNA Therapeutics, *Weizmann Institute, Rehovot, Israel*
- 06/2022 "Supervised and semi-supervised learning for predicting protein interaction sites"
Research talk for the Healthcare & Life Sciences department at IBM Research, *Givatayim, Israel*
- 01/2021 "My journey to Princeton", Lapidim Technion CS excellence program colloquium, *Virtual*
- 07/2019 "De-novo prediction of binding positions within protein domains"
Affinity groups research talk, Computational Genomics Summer Institute (CGSI), *UCLA, Los Angeles, CA*

Posters

- 12/2019 Machine Learning in Computational Biology, *Vancouver, Canada*
- 12/2019 Women in ML (WiML), *Vancouver, Canada*
- 05/2019 RECOMB (International Conference on Research in Computational Molecular Biology), *Washington, DC*
- 08/2017 Quantitative Biology Meeting: Making Use of Emerging Technologies, *Cold Spring Harbor, NY*
- 04/2017 NHGRI Training Grant Annual Meeting, *St Louis, MO*
- 04/2017 Princeton Research Day, Princeton University, *Princeton, NJ*

TEACHING AND ADVISING EXPERIENCE

- 2018 **Project Lead for First-Year Graduate Students**, Princeton University
[Spring 2018](#) Research topic: "Gradient boosting: tuning performance and predictions"
- 2017-2020 **Assistant Instructor**, Princeton University
[Fall 2017](#), [Fall 2019](#) "Introduction to Genomics and Computational Molecular Biology" (COS 551)
- 2017-2018 **ReMatch Mentor for Undergraduate Students**, Princeton University
A mentor through the Princeton ReMatch mentorship program.
Designed and supervised a summer research project and advised undergraduate students.
[Summer 2017](#) Research topic: "Statistical analysis of protein domains using physiochemical properties"
[Summer 2018](#) Research topic: "Deep learning framework for predicting proteins' functional sites"

TECHNICAL SKILLS

Programming languages: Python, R, Linux Shell, LaTeX (proficient), C, C++, C#, MATLAB, SQL (prior experience)

Data science: scikit-learn, pandas, SciPy, PyTorch, Matplotlib, seaborn | **Languages:** Hebrew and English (US citizenship)

SERVICE AND OUTREACH

Conferences

- 2020 Grace Hopper Celebration (GHC), Data Science committee member, *Virtual*
- 2020 Pacific Symposium on Biocomputing (PSB), referee, *Big Island of Hawaii*
- 2019 Machine Learning in Computational Biology (MLCB), *Vancouver, Canada*
- 2019 Women in Machine Learning (WiML) Workshop, referee, *Vancouver, Canada*
- 2018 Women in Machine Learning (WiML) Workshop, referee, *Montréal, Canada*

Journals

- 2024 Nature Communications, referee
- 2022 Bioinformatics, referee
- 2022 Briefings in Bioinformatics, referee
- 2019 Nucleic Acids Research, referee

Leadership

- 9/2024-now **Princeton GradFUTURES alum mentorship program**
Mentoring graduate students on professional development and career exploration.
- 6/2024-now **Baot (Israel's largest community of experienced women in software engineering and data science)**
Mentoring other women within the job search mentoring program.
- 2023 **Women in Data Science Israel (WiDS)**
Mentoring other women within the Women in Data Science Israel mentoring program.
- 2018-2021 **Princeton Society of Women Engineers (SWE)**
Vice President of the Princeton graduate chapter, co-organized events advancing women in STEM.
- 2017-2020 **Princeton QCB mentorship program**
Co-founded the mentorship program and served as a mentor for first-year graduate students.
- 2009-2010 **BizTEC - Israel's National Entrepreneurship competition**
Marketing director, co-organized events for academia-tech industry collaborations.