

NANCY-SARAH YACOVZADA

APPLIED MACHINE LEARNING, MEDICAL DATA SCIENTIST

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EDUCATION

2018 - 2023 **Weizmann Institute of Science**

Doctor of Philosophy | Dep. of Computer Science and Math, Dep. of Molecular Genetics, Dep. of Molecular Neuroscience

PhD carried out under the supervision of Prof. Eran Hornstein and Prof. Eran Segal

Thesis: *Multi-omics and electronic health records for studying treatment response, and biomarkers for disease diagnosis and prognosis*

2013 - 2015 **Tel Aviv University**

Masters of Science - Industrial Engineering (Information Science)

ISF research grant | carried out under the supervision of Prof. Irad Ben-Gal

Thesis: How to Supervise my Mom: Towards Unsupervised Profiling of Cyber Behavior. **Grade: 93**

2008 -2011 **Technion - Israel Institute of Technology**

Bachelor of Science - Industrial Engineering (major in Enterprise Information Systems)

2007 - 2008 **The Open University of Israel**

"Channel to the Technion" | courses in Mathematics, Physics, and Operation Research (after high-school).

WORK EXPERIENCE

2017 - 2018 **Assoc. Director, Personalized & Predictive Medicine - Analytics and Big Data Lead**

Teva Pharmaceuticals, Specialty Medicine R&D

Analytics in the service of drug development included:

- Designing and executing digital clinical trials (wearables, eDiary, etc.)
- Developing digital markers and predictive models (EHR clinical data & data from wearable devices).
- Algorithms for Software as a Medical Device (SaMD) - smart asthma inhaler.
- Establishment of an advanced cloud computing environment (on Azure) for the R&D department.
- Project: Analysis of Cluster Headache attacks from actigraphy data (efficacy endpoints). Prediction of Asthma exacerbation (time series model). Deep-learning algorithm for sleep-wake detection. Algorithm for "pPatient early termination" (clinical trial optimization).

2016 - 2017 **Lead Data Scientist**

Yotpo

NLP - text sentiment analysis, key-phrase extraction, topic modeling.

Optimization – optimal (email) delivery time, personalized email header, review rate optimization, etc.

2015 - 2016 **Senior Data Scientist**

SundaySky – personalized video platform

Research & implementation of real time bidding algorithms & dynamic pricing strategies.

2014 - 2015 **Teaching Assistant** | R programming and ML algorithms

Tel Aviv University

“Introduction to Data Science” course | graduate level course.

2013 - 2015 **Research Assistant** | **Tel Aviv university**

A member of the User-oriented Cyber Security group member at the Laboratory of AI Business and Data Analytics (LAMBDA)

ISF research grant – proposed a feedback machine learning scheme for detecting risky webpages and risky browsing behavior, performed by naïve users in the organization.

2012 - 2014 **Solution Architect and Technical Project Leader** (part-time, while working on thesis)

My Single Point – IT and Business Governance

- Providing technical expertise to dozen of projects & complex integrations (Java, JavaScript, HTTP, CSS, SQL, HQL).
- Worked with a wide variety of companies, such as: Israel's Ministry of Defense, Prime Minister Office, UBS, Clal Group, Menora-Mivtachim, Visa Cal, Cellcom, Dunstan Thomas, British Telecom, Yes, etc.

2010 - 2012 **Full stack developer and Team Leader**

One1 software

- Development of products and integrations using various technologies and frameworks.
- End-to-end team leading (agile management).
- Writing technical designs, managing training programs and several knowledge bases.

2008 - 2010 **Board Member**

Chairwomen of the Technion Student Association in the IE faculty

LIST OF PUBLICATIONS

- Yeela Talmor*, **Nancy-Sarah Yacovzada***, Haggai Rossman, Guy Witberg, Iris Kalka, Ran Kornowski, Eran Segal (2022). *Head-to-head Efficacy and Safety of Rivaroxaban, Apixaban and Dabigatran in an Observational Nationwide Targeted Trial*. (European Heart Journal - Cardiovascular Pharmacotherapy). <https://doi.org/10.1093/ehjcvp/pvac063>
- Maya Amitai*, **Nancy-Sarah Yacovzada***, et al. (2022) *Multi-omics Reveals Candidate Biomarkers for SSRI Response in Depressed and Anxious Children and Adolescents*. (In-preparation)
- Lena Molitor*, Sagy Krispin*, Welmoed van Zuiden, Yehuda M. Danino, **Nancy S. Yacovzada#**, Eran Hornstein#. (2022) *Deep learning-based multiple organellar mapping identifies subcellular dysregulation in human neurodegeneration* (In-preparation)
- Iris N. Kalka*, Rawi Hazzan*, **Nancy-Sarah Yacovzada**, Saleh Igbaria, Eran Segal, Ziv Neeman,# Adina Weinberger,# (2022) *Algorithmic screening of liver cirrhosis from nationwide electronic health records*. (submitted)
- Eran Yanowski, **Nancy-Sarah Yacovzada**, et al. *Physically interacting beta-delta pairs in the regenerating Pancreas revealed by single-cell sequencing*. Molecular Metabolism, 60, 2022, 101467, <https://doi.org/10.1016/j.molmet.2022.101467>
- Iddo Magen*, **Nancy-Sarah Yacovzada***, et al. (2022). A microRNA-based predictor for diagnosis of frontotemporal dementia (Under revision, Alzheimers & Dementia). <https://doi.org/10.1101/2020.01.22.20018408>
- Chen Eitan, et al. (2022). *Whole-genome sequencing reveals that variants in the Interleukin 18 Receptor Accessory Protein 3'UTR protect against ALS*. (Nat Neurosci). <https://www.nature.com/articles/s41593-022-01040-6>
- Magen, I*., **Yacovzada, N.S. ***, et al. *Circulating miR-181 is a prognostic biomarker for amyotrophic lateral sclerosis*. Nat Neurosci 24, 1534–1541 (2021). <https://www.nature.com/articles/s41593-021-00936-z>
- **Nancy-Sarah Yacovzada**, Eran Hornstein. (2021) *microRNAs Trip Down Memory Lane*. (EMBO). <https://doi.org/10.15252/emmm.202114997>
- Iris N Kalka*, Amir Gavrieli*, Smadar Shilo, Hagai Rossman, Nitzan Shalom Artzi, **Nancy-Sarah Yacovzada**, Eran Segal. *Estimating heritability of glycaemic response to metformin using nationwide electronic health records and population-sized pedigree*. Commun Med 1, 55 (2021). <https://doi.org/10.1038/s43856-021-00058-4>

- Iddo Magen*, **Nancy-Sarah Yacovzada***, et al. (2021). *Circulating microRNA Prediction Model for Diagnosis of ALS and FTD* (Under revision, EMBO). <https://doi.org/10.1101/2020.01.22.20018408> .
- **N. Yacovzada***, G. Shalev*, L. Granovsky*, S. Fine. (2021). *Actigraphy-based Sleep/Wake Pattern Detection using Convolutional Neural Networks*.
- J. Cooper-Knock, et al. *Rare Variant Burden Analysis within Enhancers Identifies CAV1 as a New ALS Risk Gene*. Cell Reports (2020). [10.1016/j.celrep.2020.108456](https://doi.org/10.1016/j.celrep.2020.108456).
- L. Granovsky*, R. Kamienchick*, **N. Yacovzada***, et.al. *Using Predictive Analytics to Identify Risk of Clinical Asthma Exacerbations*. (AAAAI, 2018). <https://doi.org/10.1016/j.jaci.2017.12.703>
- M. Ben Neria*, **N. Yacovzada***, I. Ben Gal. *A Risk-Scoring Feedback Model for Webpages and Web Users based on Browsing Behavior*. ACM Transactions on Intelligent Systems and Technology (2017). <https://doi.org/10.1145/2928274> .