Iman Jaljuli
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Contact Info

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Personal Info

Gender: Female

Age: 32

Country of Origin: Israel

Professional Summary

Highly skilled Mathematical Statistician with 8+ years of experience in Applied Statistics and 3+ years in Biostatistics. Extensive expertise in statistical analysis, data visualization, biomedical and genomic data analysis, and preclinical trial design, with foundational experience in clinical trial design. Strong track record of leading biostatistical research, collaborating with cross-functional teams, and providing statistical consulting on database management and web applications for statistical tools. Proficient in R, with experience in SAS and Python, specializing in statistical modeling and R package development. Excellent communication and presentation skills, particularly in conveying complex statistical concepts to non-statisticians.

Positions

Sep/2023*-present *Research Fellow in Statistical Genomics*, Stanford University
Supervisors: Prof. Stephen B. Montgomery, Prof. Chiara Sabatti

- Lead statistical analysis and interpretation of genomic data for biomedical research.
- Develop novel statistical methodologies for molecular QTL studies using linear mixed models, and non-parametric models such as the knockoff-filter.
- Integrating machine learning tools, mainly LLMs and neural networks, for genomic data analysis. Achievements: (1) I have mathematically formalized a common practice in molecular QTL data analysis, that is the use of kinship (relatedness) matrix in linear mixed modeling. I gave it mathematical integrity and identified gaps in implementation, and suggested a solution. As a result, I was able to offer a mathematically-founded analysis by extend ending the ANOVA model to accommodate to unbalanced data analysis with correlated samples. The suggested model offered type-I error control to minor or none loss in power. (2) introduce a novel analysis of molecular QTL data using knockoffs. Knockoffs were originally developed for GWAS data, in my work I borrowed the concept to develop a new method that accommodate QTL data.

Aug/2022*-Sep/2023 *Research Fellow in Biostatistics*, Memorial Sloan Kettering Cancer Center
Supervisor: Dr. Li-Xuan Qin

- Developed statistical models for tumor mutational burden assessment in immunotherapy and cutoff nomination.
- Lead team through data collection in cancer research, data pre-processing and visualizations.
  Achievements: suggesting a statistical tool to allow nominating a cutoff for patient TMB that will be used to decide to treat or not to treat with immunotherapy. The tool relies on data collected from multiple clinics which allows for a more robust and educated decision.

Education

2016-2022 *Ph.D in Statistics, Direct track*, Tel-Aviv University
Thesis: Statistical Approaches for Assessing and Enhancing Replicability
Advisor: Yoav Benjamini
Award date: April 4^{th}, 2023

2011-2015 *Bachelor of Mathematics and Statistics,* Tel-Aviv University

KEY SKILLS & COMPETENCIES

Pre-Clinical Trial Design: Basic experience in pre-clinical trial design.

Statistical Analysis & Modeling: Proficient in survival analysis, mixed models, and meta-analysis.

Programming Proficiency: R (advanced), Python (intermediate), SAS (basic), SQL.

Biostatistical Tools Development: Experience in developing statistical methodology and software for biomedical and genomic data analysis.

Collaborative Leadership: Proven ability to work effectively in cross-functional teams and communicate complex statistical concepts to non-statisticians.

Published Software

2020 metarep published on CRAN for Replicability-Analysis Tools for Meta-Analysis

Honors and Awards

2024-2025 The Katharine McCormick Advanced Postdoctoral Scholar Fellowship ($100k)

2023-2025 Stanford's Postdoctoral Family Assistance Grant ($ 9k annually)

2022-2023 The Helena Johnson Hackley Society Scholar Award ($ 10k)

2022-2024 VATAT (The Council for Higher Education in Israel) scholarship for outstanding Arab Post-Docs ($ 36k annually)

2022-2024 The Klement Arvman private scholarship for Israeli Post-docs ($ 30k annually)

2016-2020 Ariane de Rothschild-Caesarea scholarship.

2018 Excellent Teaching Assistant prize ($ 1k)

2014 Ernst prize awarded for **Excellent BSc student** (₪ 1.8k)

Publications

Under Review/Revision

- Marianne K DeGorter, Page C Goddard, Emre Karakoc, Soumya Kundu, Stephanie M Yan, Daniel Nachun, Nathan Abell, Matthew Aguirre, Tommy Carstensen, Ziwei Chen, Matthew Durrant, Vikranth R Dwaracherla, Karen Feng, Michael J Gloudemans, Naiomi Hunter, **Iman Jaljuli**, Mohana P S Moorthy, Cristina Pomilla, Kameron B Rodrigues, Courtney J Smith, Kevin S Smith, Rachel A Ungar, Brunilda Balliu, Jacques Fellay, Paul Flicek, Paul J McLaren, Brenna Henn, Rajiv C McCoy, Lauren Sugden, Anshul Kundaje, Manjinder S Sandhu, Deepti Gurdasani, Stephen B Montgomery " Transcriptomics and chromatin accessibility in multiple African population samples " (under revision)
- **Jaljuli, Iman**; Karissa Whiting; Evan Rosenbaum; Li-Xuan Qin. "Revisiting Tumor Mutational Burden Cutoff: Multi-Study Replicability in Immunotherapy" (submitted)

In Preperation

- **Jaljuli, Iman**, Stephen B. Montgomery, Daniel C. Nachun, Chiara Sabatti, "Knockoffs for molecular QTL studies analysis"
- ***Jaljuli, Iman**, David Zucker, Stephen B. Montgomery, Daniel C. Nachun, Yoav Benjamini, "Subsampling for estimation & hypothesis testing in linear mixed models"
- ***Jaljuli, Iman**, Stephen B. Montgomery, Daniel C. Nachun, Yoav Benjamini, "QTL study analysis with kinship and batch effects: A subsampling-ANOVA approach"
- ***Jaljuli, Iman**, Elissa Chesler, Yoav Benjamini. "Fallacies in replicability assessment"
- * Implementation R Software under development

Published

- **Jaljuli, Iman** , Karissa Whiting, Evan Rosenbaum, Li-Xuan Qin. "Revisiting Tumor Mutational Burden Cutoff: Multi-Study Replicability in Immunotherapy". bioRxiv 2025.01.02.631104;// doi: https://doi.org/10.1101/2025.01.02.631104
- **Jaljuli, Iman**, Neri Kafkafi, Eliezer Giladi, Ilan Golani, Illana Gozes, Elissa J. Chesler, Molly A. Bogue, and Yoav Benjamini. "A multi-lab experimental assessment reveals that replicability can be improved by using empirical estimates of genotype-by-lab interaction." PLoS biology 21, no. 5 (2023): e3002082.
- **Jaljuli, Iman,** Yoav Benjamini, Liat Shenhav, Orestis A. Panagiotou, and Ruth Heller. "Quantifying replicability and consistency in systematic reviews." Statistics in Biopharmaceutical Research, 15(2), 372â385. https://doi.org/10.1080/19466315.2022.2050291
- Fruchtman-Steinbok, Tom, Jackob N. Keynan, Avihay Cohen, **Iman Jaljuli**, Shiri Mermelstein, Gadi Drori, Efrat Routledge et al. "Amygdala electrical-finger-print (AmygEFP) NeuroFeedback guided by individually-tailored Trauma script for post-traumatic stress disorder: Proof-of-concept." NeuroImage: Clinical 32 (2021): 102859.
- Bar-Or, Ruth Lev, Ariel Kor, **Iman Jaljuli**, and Shaul Lev-Ran. "The epidemiology of substance use disorders among the adult Jewish population in Israel." European addiction research 27, no. 5 (2021): 362-370.

- Panagiotou, Orestis A., **Iman Jaljuli**, and Ruth Heller. "Replicability of Treatment Effect in Study of Blood Pressure Lowering With Dementia." JAMA 324, no. 14 (2020): 1465-1466.
- Kapitansky, Oxana, Gidon Karmon, Shlomo Sragovich, Adva Hadar, Meishar Shahoha, **Iman Jaljuli**, Lior Bikovski et al. "Single cell ADNP predictive of human muscle disorders: Mouse knockdown results in muscle wasting." Cells 9, no. 10 (2020): 2320.
- Kapitansky, Oxana, Eliezer Giladi, **Iman Jaljuli**, Stefan Bereswill, Markus M. Heimesaat, and Illana Gozes. "Microbiota changes associated with ADNP deficiencies: Rapid indicators for NAP (CP201) treatment of the ADNP syndrome and beyond." Journal of Neural Transmission 127, no. 2 (2020): 251-263.
- Kapitansky, Oxana, Shlomo Sragovich, **Iman Jaljuli**, Adva Hadar, Eliezer Giladi, and Illana Gozes. "Age and sex-dependent ADNP regulation of muscle gene expression is correlated with motor behavior: possible feedback mechanism with PACAP." International journal of molecular sciences 21, no. 18 (2020): 6715.
- Fruchtman, Tom, Avihay Cohen, **Iman Jaljuli**, Jacob Nimrod Keynan, Gadi Drori, Efrat Routledge, Michael Krasnoshtein, and Talma Hendler. "Feasibility and effectiveness of personalized amygdala-related neurofeedback for post-traumatic stress disorder." (2019).
- Kafkafi, Neri, Joseph Agassi, Elissa J. Chesler, John C. Crabbe, Wim E. Crusio, David Eilam, Robert Gerlai, **Iman Jaljuli** et al. "Reproducibility and replicability of rodent phenotyping in preclinical studies." Neuroscience & Biobehavioral Reviews 87 (2018): 218-232.
- Kafkafi, Neri, Ilan Golani, **Iman Jaljuli**, Hugh Morgan, Tal Sarig, Hanno W?rbel, Shay Yaacoby, and Yoav Benjamini. "Addressing reproducibility in single-laboratory phenotyping experiments." Nature methods 14, no. 5 (2017): 462-464.
- Sangenstedt, Susanne, **Iman Jaljuli**, Norbert Sachser, and Sylvia Kaiser. "Stress responsiveness and anxiety-like behavior: the early social environment differentially shapes stability over time in a small rodent." Hormones and Behavior 90 (2017): 90-97.

Services

2023 Reviewer for the SSGG student paper award competition of the American Statistical Association.

Invited Talks & Posters

2023 "Replicability assessment for survival prediction in cancer studies", Joint Statistical Meeting 2023.

2023 "Statistical approaches for assessing and enhancing replicability", Department of Biostatistics, School of Global Public Health, New York University, New York, NY, USA.

2020 "Quantifying replicability and consistency in systematic reviews", ISCB 2020, 41st annual conference.

2020 The 30^{th} international biometrics conference (Poster).

2019 "Replicability Issues in Mouse Phenotyping Solutions and Challenges", at The Jackson Laboratory, ME, USA.

2019 "Estimating the variance of the interaction term for enhancing replicability", Joint Statistical Meeting 2019 (Talk & poster).

2019 Workshop on Linear Mixed Models, PhD research group at Ichilov Hospital, Sagol Brain Institute, Tel Aviv.

2019 The Israeli Statistical Association, meeting of 2019 (Poster).

2018 Speaker at the "Alrowad Advaned Topics in Science" Conference for the Arab community, Tel-Aviv University, Israel.

2016 "Replicability and Reproducibility", Muenster University, Germany.

2015 "Replicability and Reproducibility", R&R conference, Tel-Aviv University.

Academic Appointments

2014-2022 Tel-Aviv University, Teaching Assistant in -

- Linear Models (for M.s.c students $\times 2$ semesters).
- Statistical Theory ($\times 4$ semesters).
- Introduction to Statistics for Computer Science ($\times 2$ semesters).
- Introduction to Statistics for Statisticians ($\times 1$ semesters).
- Introduction to Probability & Statistics for Electrical Engineers ($\times 1$ semesters).
- Statistics for Biologists ($\times 5$ semesters).
- Statistics *I* for Economy Major ($\times 2$ semesters).
- Probability and Statistics for Computer Science - Double Major ($\times 2$ semesters).

2013-2016 Research Assistant at the Benjamini lab, Tel-Aviv University

Volunteering

2020	Tutor in Statistics for girls in "Academia Lachayeem" program.
2020	Statistical Analyst in COVID-19-related Research by Researchers at TAU's School of Dental Medicine.
2020	Co-lecturer in Preparatory Math Course for Arab Students.
2019	Panel Speaker in a Meet-up for Masters and PhD Applicants\Students in the Schools of Mathematics.
2019	"Trouble at the Lab": talk at "Science on the Bar" meeting, Tel-aviv University.
2018	"Women In Academia": Talk for Bedwen Girls.
2018	"Make Your Path in Academia: Insider Tips": Lecture for Arab Students and HighTech Employees at the Hebrew University, Israel.
2017-2019	Organizer of Weekly Meetings for Undergraduate Arab students in Math Sciences and Computer Science in School of math, TAU. Contribution of Head of Math School prof. Gadi Fibich.
2016-2020	Academic Advisor for applicants and Freshman Arab Students in Schools of Computer Science, Mathematics and Engineering.

Languages

Arabic	Native speaker
Hebrew	Fluent
English	Very good