Daniel Fridljand

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PERSONAL INFORMATION

Date of birth: 21st of July 1999
Place of birth: Dresden, Germany
Nationality: German, Russian

SUMMARY

Applied Mathematician with a strong foundation in statistical modeling and machine learning from Heidelberg University, Yale University, and Stanford University. Currently enhancing mutational signature estimation at ETH Zürich. Proven track record in statistical method development and academic research with a first-author publication. Experienced at developing analytical tools using R and Python, committed to leveraging computational skills to solve real-world challenges.

EDUCATION

Yale University, New Haven, USA — Aug 2022 - May 2023
Exchange Student, Applied Mathematics
Grade: Honors (full marks)
Selected coursework: Theory and Application of Deep Learning, Topological Methods in Machine Learning
Award: German Academic Exchange Service (DAAD) Stipend

University of Heidelberg, Heidelberg, Germany — Oct 2020 - May 2023
M.Sc., Mathematics
Grade: 1.0 (full marks)
Awards: Gerhard C. Starck Foundation Stipend, Baden-Württemberg Stipend

Hebrew Univ. of Jerusalem, Jerusalem, Israel — Sep 2019 - Sep 2020
Exchange Student, Mathematics
Awards: PROMOS Stipend (DAAD),

University of Heidelberg, Heidelberg, Germany — Oct 2017 - Sep 2020
B.Sc., Mathematics
Grade: 1.4
Award: Gerhard C. Starck Foundation Stipend

Karl–Friedrich-Gymnasium, Mannheim, Germany — Sep 2009 - Jun 2017
Grade: 1.0 (full marks)

DATA SCIENCE EXPERIENCE

Research Assistant, **ETH Zürich**, Basel, Switzerland — Feb 2024 – Present

- Researching statistical methods for mutational patterns estimation with tree structures in the lab of Niko Beerenwinkel.

Research Assistant, **Stanford University**, Palo Alto, US — July 2023 – December 2024

- Analyzed the role of air pollution in the race-ethnicity to premature mortality causal chain, under Pascal Geldsetzer's guidance.
- Devised and implemented a statistical analysis in R, synthesized findings from 150 pertinent publications, wrote the initial manuscript and technical supplement, and drove the manuscript from conceptualization to successful publication.
- Executed major revisions of the manuscript and conducted new analyses, including 15 new figures, within a strict 2-month deadline as part of the 'Revise and Resubmit' response.
- Developed an interactive Shiny web application to visualize 17-dimensional data, enhancing collaboration and data interpretation among the research team.

Research Assistant, **EMBL**, Heidelberg, Germany October 2021 – May 2022

- Developed and implemented a novel statistical method in R under the guidance of Wolfgang Huber and Nikos Ignatiadis to identify outliers in large-scale data sets, enhancing detection capabilities in the presence of high-dimensional side-information.
- Successfully applied the developed method to genome-wide association study, identifying key genetic markers linked to diseases.
- Presented research findings at seven scientific events, including a seminar talks at Yale University and University of North Carolina at Chapel Hill and a competitively selected oral contribution at DAGStat 2022, attended by 100 scholars.
- Conducted the peer review for a manuscript at Bioinformatics Advances, contributed the peer review for a manuscript at Cell Biology.

TEACHING EXPERIENCE

Crash course tutor, **Studybees**, Germany Apr 2018 – Aug 2019

- Mentored over 150 students from the Mathematics, Computer Science, and Economics departments at the University of Mannheim through 10 crash courses, preparing them extensively for exams.

Freelance Writer, **Springer Nature**, Germany Aug 2019

- Developed two specialized mathematical exams focused on statistical applications in laboratory setting, enhancing the analytical skills of molecular biology students.

PUBLICATION

Geldsetzer, P.*, **Fridljand, D.*,** Kiang, M. V., Bendavid, E., Heft-Neal, S., Burke, M., ... & Benmarhnia, T. (2024). Sociodemographic and geographic variation in mortality attributable to air pollution in the United States. medRxiv, 2024-04.

SKILLS

Computer Skills: R (5 years): tidyverse, ggplot, caret, Rcpp; Python (2 years): pandas, numpy, matplotlib, pytorch
Mathematical Skills: Selective Inference, Graphical Modelling, Machine Learning, Random Forest
Languages: English (professional), German (native), Russian (native)