Anirudh Tomer

PhD Statistician · Machine Learning · Programming

Rotterdam, Netherlands

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PhD in Statistics + machine learning patent + 7.5 yrs data science and programming + R, Python, SQL, Java, Linux + ***Enthusiasm****"*

Work Experience

Data Scientist / Statistician

Rotterdam, Netherlands

P95 *Sep 2020 – Present*

- Mathematical modeling of COVID-19 spread, and COVID-19 data analysis.
- Predictive modeling and analysis of health records and surveillance data. Mixed models, survival analysis, monte carlo methods.
- Working with clients to translate business requirements in statistical/data science terms and vice versa.
- Developing machine learning tools for direct use by clients.

Visiting Researcher

Rotterdam, Netherlands

Erasmus University Medical Center *Sep 2020 – Aug 2021*

- Conducting research in joint models for time-to-event and longitudinal data, dynamic predictions, personalized medicine.
- Extending Markov decision processes to work with joint models.

Data Scientist / Statistician

Rotterdam, Netherlands

Erasmus University Medical Center *Sep 2016 – Aug 2020*

- Multivariate statistics, causal inference, randomization, sample size calculation, clinical trials, study designs, writing research articles.
- Methodologies: GLM, GLMM, cluster analysis, Neural networks, decision trees, LASSO, Bayesian methods, markov decision processes.
- Worked with 60 clients over 4 years, with projects from bioassay analysis, longitudinal observational studies, clinical trials, etc.

Programmer for Image Processing Research

Leuven, Belgium

Katholieke Universiteit Leuven *Jul 2015 – Aug 2015*

- Developed demos for a machine learning algorithm that finds features in images of clothes.

Software Developer Analytics Platform

Pune, India

TIBCO Software *Aug 2011 – Jul 2014*

- Implementing complex event processing and machine learning algorithms for TIBCO's analytics software.
- My machine learning work was filed as patent `https://patents.google.com/patent/US20140258382/en`.

Education

PhD Statistics

Rotterdam, Netherlands

Erasmus University Rotterdam *Sep 2016 – Aug 2020*

- Developed new statistical theory and models for biopsy scheduling problems in various types of cancers.
- Shiny App: `https://tiny.cc/biopsy`
- Thesis URL: `https://tiny.cc/anirudh_phd_thesis`
- Advisors: Prof. Dimitris Rizopoulos and Prof. Ewout W. Steyerberg.

MSc Statistics

Leuven, Belgium

Katholieke Universiteit Leuven *Sep 2014 – Jul 2016*

- Thesis: The use of mixture distributions in a Bayesian linear mixed effects model.
- Grade: Magna cum laude, 77.59%.
- Thesis URL: `http://tiny.cc/MScthesis_anirudh`
- Advisors: Prof. Emmanuel Lesaffre.

BE Computer Engineering

Pune, India

University of Pune *Aug 2007 – Jul 2011*

- Thesis: Device capability based multimedia transcoding over network.
- Grade: First class with distinction, 74.41%.

Skills

Programming	R, Java, Python, SQL, Linux (also used Dutch national supercomputer Cartesius for an year), AngularJS, HTML, JavaScript, C, C++, Git, Docker, Maven, Jenkins, Eclipse.
Machine learning	Bayesian methods, GLM, GLMM, LASSO, clustering, SVM, mixed effects models, Markov decision processes, survival analysis, time series analysis, neural networks, joint models.

Grants, Awards, Achievements

2021	**Invited speaker,** for personalized schedules using dynamic predictions at ISCB Conference.	*Lyon, France*
2021	**Invited speaker,** for personalized medicine in cancer at Institute of Cancer Research.	*Sutton, UK*
2020	**Honorable mention,** Hans van Houwelingen award for the best Dutch Biometry paper.	*Netherlands*
2019	**500,000 SBU on Cartesius,** Dutch national supercomputer usage grant.	*Netherlands*
2019	**Invited speaker,** Rshiny workshop by Vereniging voor Statistiek en Operations Research.	*Leiden, Netherlands*
2018	**Student award,** 10-th EMR-IBC Conference.	*Jerusalem, Israel*
2018	**Runner-up,** Best Student Oral Presentation Competition, 29-th International Biometric Conference.	*Barcelona, Spain*
2014	**Scholarship for MSc Statistics,** J.N. Tata gift scholarship and travel grant.	*Mumbai, India*
2011	**Dean's Gold medal,** for highest grades in Bachelor studies.	*Pune, India*

Scientific Publications

- Tomer, A, Nieboer, D, Roobol, MJ, Steyerberg, EW, and Rizopoulos, D (2020), Personalized schedules for shared decision making of burdensome surveillance tests. Under review at *Annals of Applied Statistics*.

- Schuurman, AS, Tomer, A, Akkerhuis, KM, Brugts, JJ, Constantinescu, AA, van Ramshorst, J, Umans, VA, Boersma, E, Rizopoulos, D, and Kardys, I (2020). Personalized screening intervals for measurement of Nterminal pro-B-type natriuretic peptide improve efficiency of prognostication in patients with chronic heart failure. *European Journal of Preventive Cardiology.* Advance online publication. doi: `https://doi.org/10.1177/2047487320922639`

- Tomer, A, Nieboer, D, Roobol, MJ, Bjartell, A, Steyerberg, EW, Rizopoulos, D (2020). Personalized biopsy schedules based on risk of Gleason upgrading for low-risk prostate cancer active surveillance patients. *BJU International*. Advance online publication. doi: `https://doi.org/10.1111/bju.15136`

- Tomer, A, Rizopoulos, D, Nieboer, D, Drost, FJ, Roobol, MJ, and Steyerberg, EW (2019). Personalized decision making for biopsies in prostate cancer active surveillance programs. *Medical Decision Making*. doi: `https://doi.org/10.1177/0272989X19861963`

- Nieboer, D, Tomer, A, Rizopoulos, D, Roobol, MJ, and Steyerberg, EW (2018). Active surveillance: a review of risk-based, dynamic monitoring. *Translational Andrology and Urology*, 7(1), 106–115. doi: `https://doi.org/10.21037/tau.2017.12.27`

- Tomer, A , Nieboer, D, Roobol, MJ, Steyerberg, EW and Rizopoulos, D (2019), Personalized schedules for surveillance of low-risk prostate cancer patients. *Biometrics*, 75: 153-162. doi: `https://doi.org/10.1111/biom.12940`

- Papageorgiou, G, Mauff, K, Tomer, A, and Rizopoulos, D (2019). An overview of joint modeling of time-to-event and longitudinal outcomes. Annual review of statistics and its application, 6, 223-240. doi: `https://doi.org/10.1146/annurev-statistics-030718-105048`

References

Dimitris Rizopoulos PhD advisor, d.rizopoulos@eramusmc.nl
Ewout Steyerberg PhD co-advisor, e.steyerberg@eramusmc.nl