

# Anirudh Tomer

PHD STATISTICIAN · MACHINE LEARNING

Schiedam, Netherlands

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*“PhD in Statistics with focus on Bayesian methods. Currently interested to conduct research in ML, natural language processing, computer vision, or time series analysis. Roughly 12 years of programming experience in various languages.”*

## Work Experience

### Statistician

Rotterdam, Netherlands

P95

Sep 2020 – Present

- Applying epidemiological study designs for COVID-19 drug safety trials.
- Regressions of different types to solve prediction, classification, and optimization problems in the vaccine industry.

### Visiting Researcher

Rotterdam, Netherlands

ERASMUS UNIVERSITY MEDICAL CENTER

Sep 2020 – Aug 2021

- Research topics: Joint models for time-to-event and longitudinal data, dynamic predictions, personalized medicine, decision making.

### Statistician

Rotterdam, Netherlands

ERASMUS UNIVERSITY MEDICAL CENTER

Aug 2016 – Aug 2020

- Statistical machine learning for disease prediction, research into optimal study designs for data collection, writing research articles.

### 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

Pune, India

TIBCO SOFTWARE

Aug 2011 – Jul 2014

- Implementing complex event processing and machine learning algorithms for TIBCO's analytics software.

### Software Development Intern

Pune, India

AMDOCS

Jul 2009 – Jan 2010

- Data mining and knowledge extraction from Wikipedia pages.

## 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. Extended Markov decision processes for use with joint models for time-to-event and longitudinal data. Worked under the Bayesian paradigm.
- Shiny App: <https://tiny.cc/biopsy>
- Thesis URL: [https://tiny.cc/anirudh\\_phd\\_thesis](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](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

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### 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.

### Statistics/ML

Bayesian methods, mixed effects models, Markov decision processes, survival analysis, time series analysis, neural networks, joint models

## Grants, Awards, Achievements

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

## Scientific Publications

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- 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

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### Dimitris Rizopoulos

PhD advisor, d.rizopoulos@erasmusmc.nl

### Ewout Steyerberg

PhD co-advisor, e.steyerberg@erasmusmc.nl