

GIACOMO DE NICOLA

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ACADEMIC EXPERIENCE

Harvard T.H. Chan School of Public Health, Harvard University <i>Postdoctoral Research Fellow</i>	Sep 2024 - present <i>Boston, MA, USA</i>
Department of Statistics, LMU Munich <i>Lecturer in Data Science</i>	Apr 2024 - Aug 2024 <i>Munich, Germany</i>
Department of Statistics, LMU Munich <i>Doctoral Researcher</i>	Jul 2019 - Mar 2024 <i>Munich, Germany</i>
Department of Finance, Bocconi University <i>Graduate Research Intern</i>	Jan-Apr 2018 <i>Milan, Italy</i>
IRPET - Regional Institute for Economic Planning of Tuscany <i>Research Intern</i>	Apr-Jun 2015 <i>Florence, Italy</i>

EDUCATION

LMU Munich <i>PhD in Statistics</i>	2019 - 2024 <i>Munich, Germany</i>
Bocconi University <i>MSc in Economic and Social Sciences</i>	2015 - 2019 <i>Milan, Italy</i>
University of Florence <i>BSc in Statistics</i>	2012 - 2015 <i>Florence, Italy</i>

HONORS AND AWARDS

Corona Special Award: Impact of the pandemic on the economy and society - 2022

Awarded by the Federal Statistical Office of Germany (Destatis) for outstanding work examining empirical issues with intensive use of data related to the COVID-19 pandemic. Awarded for the papers “On assessing excess mortality in Germany during the COVID-19 pandemic” and “An update on excess mortality in the second year of the COVID-19 pandemic in Germany”.

DAGStat Best Poster Award - 2022

Awarded for the poster “Modelling large and dynamically growing bipartite networks - A case study in patent data” presented at the DAGStat conference, March 28-Apr 1, 2022, Hamburg, Germany.

“Giuseppe Parenti” Prize, Best Graduate - 2016

Awarded by the alumni association of the Faculty of Economics at the University of Florence (“Associazione Villa Favard”) on the basis of overall GPA among all graduates of the faculty of Economics, Management and Statistics of the class of 2015 (first place among 1000+ students).

Productivity and merit scholarship - 2013, 2014, 2015

Scholarship awarded on the basis of academic merit and productivity by the University of Florence.

GRANTS AND OTHER FUNDING

Developing Climate-Smart Public Health Systems in Nepal <i>Amazon Web Services & Harvard Data Science Initiative</i>	Co-PI, \$527,000 <i>Jul 2025-Jun 2027</i>
Estimating Protein and Caloric Inadequacy Globally <i>Global Alliance for Improved Nutrition</i>	PI, \$9,000 <i>Apr 2025-Jun 2025</i>
Mentoring Program Fellowship <i>LMU Munich program supporting excellent young scientists for international travel</i>	Fellow, €3,000 <i>2023-2024</i>

RESEARCH

Current Research Interests

- Geo-spatial data science
- Statistical network analysis
- Causal methods
- Excess mortality estimation
- Planetary health
- Public health

Publications

- [16] Golden, C. D., Childs, M. L., Mudele, O. E., Andriamizarasoa, F. A., Bouley, T. A., De Nicola, G., Fontaine, M. A., Huybers, P. J., Mahatante, P. T., Rabemananjara, R., Rakotoarison, N., Ramambason, H. R., Ramihantaniarivo, H., Randriamady, H. J., Randriatsara, H., Ravelomanantsoa, M. A., Razafinimanana, A. K. S., Rigden, A. J., Guillemot, J. S., ... Dominici, F. (2025). Climate-Smart Public Health for Global Health Resilience. *The Lancet Planetary Health*, 9(8), 101293. <https://doi.org/10.1016/j.lanplh.2025.101293>
- [15] De Nicola, G. (2025). Discussion of “Some Statistical Aspects of the Covid-19 Response” by Wood et al. *Journal of the Royal Statistical Society, Series A: Statistics in Society*, qnaf102. <https://doi.org/10.1093/rsssa/qnaf102>
- [14] De Nicola, G., & Kauermann, G. (2025). Estimating excess mortality in high-income countries during the COVID-19 pandemic. *Journal of the Royal Statistical Society, Series A: Statistics in Society*, 188(1), 205–222. <https://doi.org/10.1093/rsssa/qnae031>
- [13] Fritz, C., De Nicola, G., Rave, M., Weigert, M., Khazaei, Y., Berger, U., Küchenhoff, H., & Kauermann, G. (2024). Statistical modelling of COVID-19 data: Putting generalized additive models to work. *Statistical Modelling*, 24(4), 344–367. <https://doi.org/10.1177/1471082X221124628>
- [12] De Nicola, G., Fritz, C., Mehrl, M., & Kauermann, G. (2023). Dependence matters: Statistical models to identify the drivers of tie formation in economic networks. *Journal of Economic Behavior & Organization*, 215, 351–363. <https://doi.org/10.1016/j.jebo.2023.09.021>
- [11] De Nicola, G., Tuekam Mambou, V. H., & Kauermann, G. (2023). COVID-19 and social media: Beyond polarization. *PNAS Nexus*, 2(8), pgad246. <https://doi.org/10.1093/pnasnexus/pgad246>
- [10] Fritz, C., De Nicola, G., Kevork, S., Harhoff, D., & Kauermann, G. (2023). Modelling the large and dynamically growing bipartite network of german patents and inventors. *Journal of the Royal Statistical Society Series A: Statistics in Society*, 186(3), 557–576. <https://doi.org/10.1093/rsssa/qnad009>
- [9] Fritz, C., De Nicola, G., Günther, F., Rügamer, D., Rave, M., Schneble, M., Bender, A., Weigert, M., Brinks, R., Hoyer, A., Berger, U., Küchenhoff, H., & Kauermann, G. (2022). Challenges in interpreting epidemiological surveillance data – experiences from Germany. *Journal of Computational and Graphical Statistics*, 32(3), 765–766. <https://doi.org/10.1080/10618600.2022.2126482>

- [8] De Nicola, G., & Kauermann, G. (2022). An update on excess mortality in the second year of the COVID-19 pandemic in Germany. *AStA Wirtschafts-und Sozialstatistisches Archiv*, 16, 21–24. Awarded with the "Corona Special Award: Impact of the pandemic on the economy and society" by the Federal Statistical Office of Germany. <https://doi.org/10.1007/s11943-022-00303-9>
- [7] De Nicola, G., Schneble, M., Kauermann, G., & Berger, U. (2022). Regional now- and forecasting for data reported with delay: Towards surveillance of COVID-19 infections. *AStA Advances in Statistical Analysis*, (106), 407–426. <https://doi.org/10.1007/s10182-021-00433-5>
- [6] De Nicola, G., Kauermann, G., & Höhle, M. (2022). On assessing excess mortality in Germany during the COVID-19 pandemic. *AStA Wirtschafts-und Sozialstatistisches Archiv*, 16, 5–20. Discussed in interviews and featured in **Nature** and **The New York Times**. Awarded with the "Corona Special Award: Impact of the pandemic on the economy and society" by the Federal Statistical Office of Germany. <https://doi.org/10.1007/s11943-021-00297-w>
- [5] De Nicola, G., Sischka, B., & Kauermann, G. (2022). Mixture models and networks: The stochastic blockmodel. *Statistical Modelling*, 22(1-2), 67–94. <https://doi.org/10.1177/1471082X211033169>
- [4] De Nicola, G. (2021). On the intraday behavior of Bitcoin. *Ledger*, 6, 58–80. <https://doi.org/10.5195/ledger.2021.213>
- [3] Schneble, M., De Nicola, G., Kauermann, G., & Berger, U. (2021). A statistical model for the dynamics of COVID-19 infections and their case detection ratio in 2020. *Biometrical Journal*, 63(8), 1623–1632. <https://doi.org/10.1002/bimj.202100125>
- [2] Schneble, M., De Nicola, G., Kauermann, G., & Berger, U. (2021). Nowcasting fatal COVID-19 infections on a regional level in Germany. *Biometrical Journal*, 63(3), 471–489. <https://doi.org/10.1002/bimj.202000143>
- [1] Conti, E., Sgandurra, G., De Nicola, G., Biagioni, T., Boldrini, S., Bonaventura, E., Buchignani, B., Della Vecchia, S., Falcone, F., Fedi, C., et al. (2020). Behavioural and emotional changes during COVID-19 lockdown in an Italian paediatric population with neurologic and psychiatric disorders. *Brain Sciences*, 10(12), 918. <https://doi.org/10.3390/brainsci10120918>

Working Papers and Work in Progress

Lead Author:

- "Spatiotemporal dynamics of harmful algal blooms and their impact on marine food poisoning in Madagascar." (*Manuscript in preparation*).
- "The global intersection of protein and caloric inadequacy." (*Manuscript in preparation*).
- "A causal inference framework for estimating the impact of soil moisture on malaria incidence in Madagascar." (*Analysis in progress*).
- "Collaboration and geographic distance: A statistical network model for gravity estimation" (*Analysis in progress*).

Co-Author:

- "A climate-smart public health research data platform for Madagascar."
- "The impact of food insecurity on mental health in coastal Madagascar."
- "The association between environmental shocks and food production shocks and diet quality in south-western Madagascar"
- "Spatiotemporal dynamics of asthma prevalence in Madagascar."
- "The association of cyclonic storms with traumatic injuries and diarrheal illness in Madagascar."

- “Grocery vouchers to Inuit Elders during the COVID-19 pandemic associated with fewer meals accessed at an Arctic community food center in Canada.”
- “Estimating the time- and space-varying case detection ratio of health conditions at the local level in Madagascar”

Books

- “Statistics: Coping with Uncertainty.” An introductory textbook on statistical inference incorporating data science concepts. (*With Göran Kauermann, Cornelius Fritz, and David Rügamer - forthcoming, expected early 2026*).

TEACHING

Courses

- **Lecturer and course designer** for *Advanced Statistical Modeling* (MSc Data Science, LMU Munich, 2019-2022). This course was evaluated by students as the best of the masters program for each of the three years I taught it.
- **Teaching Assistant** at LMU Munich for the following courses:
 - *Statistical Reasoning and Inference 1 & 2* (MSc Data Science, 2020-2023)
 - *Statistical Inference 1 & 2* (BSc Statistics, 2022-2024)
 - *Analysis of Longitudinal Data* (MSc Statistics, 2020-2021)
 - *Regression for Correlated Data* (MSc Statistics, 2022)
- **Seminar Instructor**, LMU Munich: Led multiple semester-long, project-based research courses for BSc and MSc students. Topics included Complex Networks, Social Network Analysis, COVID-19 Data, Political Networks, and Open Science in Statistics & Machine Learning (2020-2024).

Supervised Theses

- “Spatiotemporal Dynamics of Harmful Algal Blooms and New Diagnoses of Asthma in Coastal Madagascar” (Kira Hülsdünker, Masters in Public Health, University of Berlin & Harvard University, 2025)
- “Exploring user interaction dynamics in knowledge graphs through network analysis” (Christian Soraruf, MSc Data Science, LMU Munich, 2024)
- “Evaluating the performance of latent space models under misspecification through simulation” (Yiming Zhao, BSc Statistics and Data Science, LMU Munich, 2024)
- “Statistical network data analysis of German companies and their boards of directors” (Marie Kraft, BSc Statistics, LMU Munich, 2022, in German)
- “Network analysis of COVID-19 Twitter data” (Victor Tuekam, MSc Data Science, LMU Munich, 2022)
- “Recovering network structure through latent space models” (Lea Schulz-Vanheyden, BSc Statistics, LMU Munich, 2020)

Further Supervision & Mentoring

- **Project lead**, Capstone Project, Carnegie Mellon University: Leading a team of Computational Data Science master students in developing an early warning system for harmful algal blooms using machine learning with remote sensing data (2025-2026).
- **Team lead**, Harvard University: Supervising a team of Harvard College undergraduates in a research project on the health risks posed by harmful algal blooms (2025-2026).
- **Junior supervisor and mentor**, Harvard University: Acting as co-supervisor and junior mentor for several PhD and master students at Harvard. (2024-2026).

Talks

- **28/01/2026** Climate-Smart Public Health: A Data Science Framework for Planetary Health. *SCA/HPC Asia 2026 (invited talk), Osaka, Japan (upcoming)*.
- **14/01/2026** Data Science in Society. *Seminar (invited), Faculty of Economics and Business Administration, Humboldt University of Berlin, Germany (upcoming)*.
- **01/12/2025** Harnessing planetary health data science approaches to understanding food safety and food security in Madagascar. *Invited Seminar, Department of Nutrition, Harvard University (with C. Golden and O. Mudele), Boston, MA, USA*.
- **03/08/2025** Harmful Algal Blooms and their impact on Marine Food Poisonings in Madagascar. *Joint Statistical Meetings (JSM) 2025, Nashville, TN, USA*
- **22/07/2025** Climate-Smart Public Health. *Full-day workshop for Madagascar Ministries of Public Health, Environment, and Fisheries (with C. Golden and H. Randriamady), Antananarivo, Madagascar*
- **16/06/2025** Data Science for Planetary Health. *Full-day focused tutorial (invited), LMU Munich, Germany*
- **09/05/2025** Harmful Algal Blooms and their impact on Marine Food Poisonings in Madagascar. *NSF AI-SDM Seminar (invited), Carnegie Mellon University, Pittsburgh, PA, USA*
- **17/07/2024** Nowcasting and forecasting register data. *Mini-symposium: Exploring disease patterns across space and time, LMU Munich, Germany*
- **29/06/2024** Dependence matters: Statistical models to identify the drivers of tie formation in economic networks. *SUNBELT 2024, Edinburgh, Scotland, United Kingdom*
- **14/03/2024** Data science in society: Modeling network and public health data. *Seminar (invited), Faculty of Informatics, USI, Lugano, Switzerland*
- **09/08/2023** Estimating excess mortality in high income countries during the COVID-19 pandemic. *Joint Statistical Meetings (JSM) 2023, Toronto, Canada*
- **19/07/2023** A connected world: Data analysis for real-world network data. *Full day workshop (with C. Fritz and G. Kauermann), BERD Academy Series 2023, Garching, Germany*
- **15/03/2023** Dependence matters: Latent variable models for social and economic network analysis. *Seminar (invited), ifo Center for Industrial Organization and New Technologies, Munich, Germany*
- **13/12/2022** Estimating excess mortality in high income countries during the COVID-19 pandemic. *IMS International Conference on Statistics and Data Science (ICSDS) 2022, Florence, Italy*
- **8/12/2022** A connected world: Data analysis for real-world network data. *Full day workshop (with C. Fritz and G. Kauermann), BERD Academy Series 2022, Garching, Germany*
- **20/09/2022** Exploring the latent social space of COVID-19 Twitter elites. *Statistical Week 2022, Münster, Germany*
- **19/09/2022** Estimating excess mortality in high income countries during the COVID-19 pandemic. *Young Statisticians Workshop of the German Statistical Society 2022, Münster, Germany*
- **14/09/2022** Exploring the latent social space of COVID-19 Twitter elites. *EUSN Conference 2022, London, England, United Kingdom*
- **30/03/2022** Modelling large and dynamically growing bipartite networks - A case study in patent data (poster presentation, best poster award winner). *DAGStat Conference 2022, Hamburg, Germany*
- **10/07/2020** Nowcasting Fatalities and Surveillance of COVID-19 Infections on a Regional Level in Germany. *COSTNET COVID-19 Conference, Munich, Germany*

PUBLIC ENGAGEMENT & RESEARCH IMPACT

Professional Service

Peer review activity for *The Annals of Applied Statistics*, *Journal of the Royal Statistical Society: Series C (Applied Statistics)*, *Royal Society Open Science*, *Scientific Reports*, *Environmental Research*, *BMC Public Health*, *International Journal of Biostatistics*, *Journal of Open Source Software*.

Memberships and Fellowships

I am a member of the German Statistical Society (Deutsche Statistische Gesellschaft) and the Institute of Mathematical Statistics (IMS).

Media Appearances

My research on COVID-19 excess mortality was featured in interviews with Nature, New Scientist and The New York Times, in addition to other German, Swiss, and Italian media and TV outlets.

LANGUAGE SKILLS

Italian	Native
English	Fluent (Cambridge English C2 Proficiency)
German	Fluent (Goethe Institute C2 Certificate)

REFEREES

Prof. Dr. Göran Kauermann

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Prof. Dr. Christopher Golden

Bruce A. Beal, Robert L. Beal and Alexander S. Beal Associate Professor of Nutrition and Planetary Health

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Prof. Dr. Francesca Dominici

Clarence James Gamble Professor of Biostatistics, Population, and Data Science

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Notes: Prof. Kauermann was my doctoral advisor at LMU Munich. Profs. Golden and Dominici are my joint postdoctoral mentors at Harvard University.