DR. CORNELIUS FRITZ

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WORK EXPERIENCE

Interim Professor for Data Science 2022 - today
Department of Statistics, LMU Munich

Research Assistant 2019 - 2022
Department of Statistics, LMU Munich

Tutor 2018 - 2019
Department of Statistics, LMU Munich

Graduate Assistant 2016 - 2018
Department of Statistics, LMU Munich

Undergraduate Assistant 2015 - 2016
Department of Statistics, LMU Munich

EDUCATION

Ph.D. in Statistics 2019 - 2022
LMU Munich

M.Sc. in Statistics 2016 - 2018
LMU Munich

M.Sc. in Statistics, Visiting Student 2018
Universidad Complutense de Madrid

B.S. in Statistics with a minor in Sociology 2013 - 2016
LMU Munich

TEACHING EXPERIENCE

Courses

- *Sampling Theory* for bachelor students (2022, Lecturer)
- *Applied Statistical Projects* for bachelor students (2022, Lecturer and Supervisor)
- *Statistical Inference 2* for graduate students (2020 and 2021, Teaching Assistant)
- *Statistical Inference 1* for graduate students (2019 and 2020, Teaching Assistant)
- *Introduction to statistical software* for bachelor students (2019, Lecturer)
- *Generalized Regression Models* for bachelor students (2018 and 2019, Tutor)

Seminars

- Modeling under Dependence (2022, graduate level)
- Statistical Modeling of Political Networks (2022, graduate level)

- Statistical Analysis of Social Networks (2021, graduate level)
- Complex Networks (2020, graduate level)

HONORS AND AWARDS

Best Poster Award - DAGSTAT 2022

Awarded for the poster *"Modelling large and dynamically growing bipartite networks - A case study in patent data"* presented at the DAGSTAT conference by Giacomo De Nicola, March 28-Apr 1, 2022, Hamburg, Germany

Core-member - CAS Focus Group on Policies for the Prevention of Conflict

Lead by Paul W. Thurner und Uwe Sunde, this focus group from the Center of Advanced Studies at the LMU organizes workshops and fosters interdisciplinary research to study conflict data.

Member - LMU Mentoring Program

The mentoring program supports young scientists (doctoral students and postdocs) on their way to an academic career. Funds acquired through this program allowed me to visit collaborators in the United States and participate in international conferences.

Best Master Thesis Award - Department of Statistics, LMU 2022

Awarded for my master thesis *"Dynamic Social Network Models for Time-Stamped Data"* written under the supervision of Prof. Dr. Göran Kauermann.

LANGUAGE SKILS

German	Native
English	Fluent
Spanish	Intermediate

RESEARCH

General Research Interests

- Dynamic and Static Social Network Analysis
- Optimization and its statistical Properties
- General Statistical Modeling

Publications under Review

[15] De Nicola, G., Fritz, C., Mehrl, M., & Kauermann, G. (2022). Statistical network data analysis in economics. *arXiv*. https://doi.org/10.48550/arXiv.2210.14860

[14] Fritz, C., Mehrl, M., Thurner, P. W., & Kauermann, G. (2022a). Exponential random graph models for dynamic signed networks: An application to international relations. *arXiv*. https://doi.org/10.48550/arXiv.2205.13411

Peer-reviewed Publications

[13] Fritz, C., De Nicola, G., Kevorg, 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), (In print)*. https://doi.org/10.48550/arXiv.2201.09744

[12] Rügamer, D., Kolb, C., Fritz, C., Pfisterer, F., Bischl, B., Shen, R., Bukas, C., de Andrade e Sousa, L. B., Thalmeier, D., Baumann, P., Klein, N., & Müller, C. L. (2023). Deepregression: A flexible neural network framework for semi-structured deep distributional regression. *Journal of Statistical Software*, *105*(2), 1–31. https://doi.org/10.18637/jss.v105.i02

[11] Fritz, C., De Nicola, G., Rave, M., Weigert, M., Berger, U., Küchenhoff, H., & Kauermann, G. (2022). Statistical modelling of COVID-19 data: Putting generalised additive models to work. *Statistical Modelling*, *(OnlineFirst)*. https://doi.org/10.1177/1471082X221124628

[10] Fritz, C., Mehrl, M., Thurner, P. W., & Kauermann, G. (2022b). All that glitters is not gold: Relational events models with spurious events. *Network Science*, *(OnlineFirst)*. https://doi.org/10.1017/nws.2022.22

[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*, *(OnlineFirst)*. https://doi.org/10.1080/10618600.2022.2126482

[8] Fritz, C., Dorigatti, E., & Rügamer, D. (2022). Combining graph neural networks and spatio-temporal disease models to predict COVID-19 cases in Germany. *Scientific Reports*, *3930*(12), 1–18. https://doi.org/10.1038/s41598-022-07757-5

[7] Berger, U., Fritz, C., & Kauermann, G. (2022). Reihentestungen an Schulen können die Dunkelziffer von COVID-19 Infektionen unter Schülern signifikant senken. *Das Gesundheitswesen*, *84*(6), 495–502. https://doi.org/10.1055/a-1813-9778

[6] Fritz, C., & Kauermann, G. (2022). On the interplay of regional mobility, social connectedness, and the spread of COVID-19 in Germany. *Journal of the Royal Statistical Society. Series A (Statistics in Society)*, *185*(1), 400–424. https://doi.org/10.1111/rssa.12753

[5] Fritz, C., Mehrl, M., Thurner, P. W., & Kauermann, G. (2021). The role of governmental weapons procurements in forecasting monthly fatalities in intrastate conflicts: A semiparametric hierarchical hurdle model. *International Interactions*, *48*(4), 778–799. https://doi.org/10.1080/03050629.2022.1993210

[4] Fritz, C., Thurner, P. W., & Kauermann, G. (2021). Separable and semiparametric network-based counting processes applied to the international combat aircraft trades. *Network Science*, *9*(3), 291–311. https://doi.org/10.1017/nws.2021.9

[3] Baumann, S. A., Fritz, C., & Mueller, R. S. (2020). Food antigen-specific ige in dogs with suspected food hypersensitivity. *Tierarztliche Praxis. Ausgabe K, Kleintiere/Heimtiere*, *48*(6), 395–402. https://doi.org/10.1055/A-1274-9210/ID/R12749210-0044

[2] Fritz, C., Lebacher, M., & Kauermann, G. (2020). Tempus volat, hora fugit: A survey of tie-oriented dynamic network models in discrete and continuous time. *Statistica Neerlandica*, *74*(3), 275–299. https://doi.org/10.1111/stan.12198

Book Chapter

[1] Kauermann, G., & Fritz, C. (2022). Analyse von Netzwerkdaten. In B. Wawrzyniak & M. Herter (Eds.), *Neue Dimensionen in Data Science* (pp. 151–161). Wichmann.

Talks

- **27.09.2022 (London, UK)**: All that Glitters is not Gold: Relational Events Models with Spurious Events **(Invited Talk)**. *CMStatistics 2022*

- **12.12.2022 (Dublin, IR)**: Statistical Approaches to Dynamic Networks in Society **(Invited Talk)**. *Statistics Seminar*
- **27.09.2022 (Leipzig, DE)**: Statistical Approaches to Dynamic Networks: From Discrete to Continuous Observations **(Invited Talk)**. *Workshop Statistical Methods on Networks*
- **21.09.2022 (Münster, DE)**: Exponential Random Graph Models for Dynamic Signed Networks/ An Application to International Relations. *Statistische Woche*
- **19.09.2022 (Münster, DE)**: All that Glitters is not Gold: Relational Events Models with Spurious Events. *DStatG Nachwuchsworkshop*
- **15.09.2022 (London, UK)**: Exponential Random Graph Models for Dynamic Signed Networks/ An Application to International Relations. *EUSN2022 - Europen Conference on Social Networks*
- **10.06.2022 (Zurich, CH)**: Statistical Approaches to Dynamic Networks: From Discrete to Continuous Observations. *Seminar at the Social Networks Lab at ETH Zurich*
- **06.06.2022 (Lugano, CH)**: Statistical Approaches to Dynamic Networks: From Discrete to Continuous Observations. *CI Seminar USI Lugano*
- **29.03.2022 (Hamburg, DE)**: All that Glitters is not Gold: Relational Events Models with Spurious Events. *DAGSTAT 2022*
- **26.11.2021 (Online)**: Networks $\neq$ Networks **(Invited Talk)**. *Center for Advanced Studies LMU: AI and Uncertainty*
- **8.10.2020 (Online)**: The Role of Governmental Weapons Procurements in Forecasting Monthly Fatalities in Intrastate Conflicts: A Semiparametric Hierarchical Hurdle Model. *ViEWS Workshop*
- **24.-25.9.2020 (Online)**: Tempus Volat, Hora Fugit - A Survey of Tie-Oriented Dynamic Network Models in Discrete and Continuous Time. *COSTNET 2020*
- **10.6.2020 (Online)**: Regional Mobility, Social Connectedness,and the Spread of COVID-19 in Germany. *COSTNET COVID-19 Conference*
- **13.-17.9.2020 (Online)**: A Counting Processes-based Model for the Analysis of the International Arms Trade Network from 1950 to 2017. *Sunbelt Virtual Conference*
- **9.-11.10.2019 (Bilbao, ES)**: A Counting Processes-based Model for the Analysis of the International Arms Trade Network from 1950 to 2017. *COSTNET19 Conference*
- **9.-11.9.2019 (Zurich, CH)**: A Counting Processes-based Model for the Analysis of the International Arms Trade Network from 1950 to 2017. *EUSN2019 - Europen Conference on Social Networks*
- **6.-7.9.2019 (Zurich, CH)**: Tempus Volat, Hora Fugit - A Survey of Tie-Oriented Dynamic Network Models in Discrete and Continuous Time. *Satellite meeting on Relational Event Model: EUSN2019 - Europen Conference on Social Networks*

Last updated: January 23, 2023