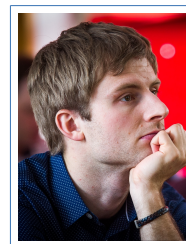# Tomas Masak

Bernoulli Instructor (Lecturer)

Institute of Mathematics
EPFL

✉ tom.masak@gmail.com
🌐 tmasak.github.io
○ github.com/tmasak

Education

2022 **D.Sc. (Ph.D.) in Mathematics**,
École polytechnique fédérale de Lausanne (EPFL).
Thesis: *Covariance Estimation for Random Surfaces Beyond Separability*,
Advisor: Prof. **Victor M. Panaretos**

2020 **RNDr. in Mathematical Statistics**, *Charles University*.

2017 **Mgr. (M.Sc.) in Probability, Mathematical Statistics and Econometrics**, *Charles University*.
Thesis: *Big Data – Extraction of Key Information Combining Methods of Mathematical Statistics and Machine Learning* Advisor: Prof. **Jaromír Antoch**

2014 **Bc. (B.Sc.) in General Mathematics**, *Charles University*.
Thesis: *Fault Tree Analysis*, Advisor: Prof. **Jaromír Antoch**

Additional Experience

2022- **Bernoulli Instructor (Lecturer) in Statistics**, *EPFL*.

Fall 2017 **Research & teaching assistant**, *Technische Universität München (TUM)*.
Supervisors: Prof. **Felix Krahmer** & Prof. **Claudia Klüppelberg**

Fall 2016 **Erasmus exchange program**, *TUM*.

Spring 2016 **Visiting scholar**, *Eidgenössische Technische Hochschule Zürich (ETHZ)*.
Supervisor: Prof. **Sara van de Geer**

Fall 2015 **Modelling consultant**, *CSOB (KBC group)*.

Journal Publications

2022 Random Surface Covariance Estimation by Shifted Partial Tracing (with V.M. Panaretos) *Journal of the American Statistical Association*

2022 (to appear) Separable Expansions for Covariance Estimation via the Partial Inner Product (with V.M. Panaretos & S. Sarkar) *Biometrika*

2022 Inference and Computation for Sparsely Observed Random Surfaces (with V.M. Panaretos & T. Rubín) *Journal of Computational and Graphical Statistics*

2017 Iteratively Reweighted Least Squares Algorithm for Sparse Principal Component Analysis with Application to Voting Records. *Statistika: Statistics and Economy Journal 97*, 88-106

Honors & Awards

2022 **Doctoral Program Thesis Distinction (top 8%)**, *EPFL*.

2022 **Teaching Award**, *EPFL*.

2017 **Master's Thesis Award (1st place)**, *Charles University, Department of Probability and Statistics*.

2017 **1st place**, *Student research competition "SVOC" in mathematics and computer science*.

2016 **Best poster presentation award**, *ROBUST 2016*.

2016 **Mobility fund fellowship**, *Charles University*.

2015-2016 **Scholarship for excellent study results**, *Charles University, Faculty of Mathematics and Physics*, (category A – Top 5%).

Selected Talks

2022 IMS International Conference on Statistics and Data Science, *Florence*, contributed talk

2022 Adaptive and High-Dimensional Spatio-Temporal Methods for Forecasting, *Centre International de Rencontres Mathématiques (CIRM)*, **invited talk**

2022 Statistical Laboratory, *University of Cambridge*, seminar talk

2022 Bernoulli Young Researcher Event, *online*, **invited talk**

2022 International Symposium on Nonparametric Statistics, *Cyprus*, contributed talk

2022 ROBUST 2022, *Czech Republic*, **invited talk**

2021 Bernoulli-IMS 10th World Congress in Probability and Statistics, *Seoul (online)*, contributed talk

2021 Department of Probability and Mathematical Statistics, *Prague*, seminar talk

2020 CMStatistics, *London*, **invited talk**

2018 Workshop on Sparsity in Applied Mathematics and Statistics, *Brussels*, **invited talk**

Professional Activities

2022- Statistics seminar, *EPFL*, organizer (jointly with Yoav Zemel)

Fall 2022 MLSTATS summer school, *Switzerland*, organizing committee member

Spring 2019 Reading seminar on high dimensional data analysis, *EPFL*, organizer

Refereeing:

- *Journal of the Royal Statistical Society, Series B (Statistical Methodology)*
- *Journal of the American Statistical Association*
- *Biometrika*
- *Computational Statistics*
- *IEEE Journal of Selected Topics in Signal Processing*

Teaching Record

Spring 2023	**Lecturer**, Applied Statistics, *EPFL*.
Fall 2022	**Lecturer**, Statistical Computation and Visualization, *EPFL*.
Fall 2021	**Principal teaching assistant (TA)**, Linear Models, *EPFL* (Prof. V.M. Panaretos).
Spring 2021	**Principal TA**, Statistique pour Mathematiciens, *EPFL* (Dr. M. Suveges).
Fall 2020	**Principal TA**, Linear Models, *EPFL* (Prof. V.M. Panaretos).
Spring 2020	**TA**, Statistique pour Mathematiciens, *EPFL* (Prof. V.M.Panaretos).
Fall 2019	**Principal TA**, Linear Models, *EPFL* (Prof. V.M. Panaretos).
Spring 2019	**Principal TA**, Time Series, *EPFL* (Prof. A.C. Davison).
Fall 2018	**Principal TA**, Statistics for Data Science, *EPFL* (Prof. V.M. Panaretos).
Spring 2018	**TA**, Time Series, *EPFL* (Dr. E. Thibaud).
Fall 2017	**Teaching fellow (TF)**, Time Series Analysis, *TUM* (Prof. C. Klüppelberg). 4 hours/week of independent teaching
Fall 2015	**TF**, Probability and Math. Statistics, *Charles University* (Prof. D. Hlubinka).
Fall 2015	**TF**, Statistics, *Charles University, IES* (Dr. M. Cervinka).
Spring 2015	**TA**, Mathematics 1A, Czech Technical University (Prof. P. Kucera).
Lecturing	Respectively 4, 2, and 2 hours, replacing Prof. A.C. Davison or Prof. V.M. Panaretos for the courses Time Series, Linear Models, and Statistics for Data Science, *EPFL*

Mentoring

2023	Covariance Estimation for Matrix-variate Data, *semester project (Master)*
2022	Classification of Brain Voxels from Dynamic Contrast-Enhanced MRI, **Master's Thesis**
2022	Clustering Functional Data to Localize Damaged Tissue in MRI, *semester project (Master)*, with Prof. V.M. Panaretos
2021	Forecasting Functional Time Series, *semester project (Master)*, with Prof. V.M. Panaretos & L. Santoro
2021	Functional Principal Component Analysis with Application to COVID-19 Dynamics, *semester project (Bachelor)*, with Prof. V.M. Panaretos & L. Santoro
2020	Introduction to Non-parametric Density Estimation, *semester project (Bachelor)*, with Prof. V.M. Panaretos (informal)
2019	Modelling of Selective Nerve Stimulation for Prostheses with Sensory Feedback Using Machine Learning Methods, *semester project (Master)*, with Prof. F. Eisenbrandt & Dr. I. Malinovic
2019	Matrix-variate Normal Distribution, *semester project (Bachelor)*, with Prof. V.M. Panaretos