

Filip Bočinec

Curriculum Vitae

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Date of birth: May 8th, 2000

Nationality: Slovak

ORCID: 0009-0000-4415-9302

Email: bocinec@karlin.mff.cuni.cz

Research interests

Nonparametric multivariate statistics, robust statistics, statistical depth, functional data analysis

Education

- **Charles University, Faculty of Mathematics and Physics** 2024 – ongoing
PhD in Probability and Statistics, Econometrics and Financial Mathematics Prague, Czech Republic
 - *Specialisation in Mathematical Statistics*
 - *Dissertation topic: Nonparametric statistical analysis of multivariate and non-standard data*
 - *Supervisor: doc. Mgr. Stanislav Nagy, Ph.D.*
- **Charles University, Faculty of Mathematics and Physics** 2019 – 2024
Master's and Bachelor's Degrees Prague, Czech Republic
 - **Mgr. in Probability and Mathematical Statistics (summa cum laude)**
 - *Master's Thesis: Halfspace depth for location and scatter: robustness and minimax optimality*
 - **Bc. in General Mathematics**
 - *Bachelor's Thesis: Anderson's theorem*

Grants and funding

- **Principal Investigator of Charles University Grant Agency research grant** 2025 – 2027
Optimal Robust Estimators Based on Statistical Depth, 60125
- **Research Collaborator on ERC CZ research grant** 2024 – ongoing
Geometric Multivariate and Non-Euclidean Statistics, LL2407
- **Research Collaborator on Czech Science Foundation research grant** 2024
Geometric Multivariate and Non-Euclidean Statistics, GAČR 24-10822S

Publications

- [1] Bočinec, F., Nagy, S., Yeon, H. (2026+). Projection depth for functional data: Computation and applications. Manuscript under review.
- [2] Bočinec, F., Nagy, S., Yeon, H. (2026+). Projection depth for functional data: Theoretical properties. Manuscript under review.
- [3] Bočinec, F., Nagy, S. (2025). Location and scatter halfspace median under α -symmetric distributions. *Journal of Nonparametric Statistics*, 1–29.
- [4] Bočinec, F., Mendroš, E., Nagy, S. (2025). A Comparison of Band-based Approaches to Functional Depth. In: Aneiros, G., Bongiorno, E.G., Goia, A., Hušková, M. (eds) *New Trends in Functional Statistics and Related Fields. IWFOs 2025. Contributions to Statistics*.
- [5] Bočinec, F., Nagy, S. (2024). Conditions for equality in Anderson's theorem. *Statistics & Probability Letters*, 209, 110094.

Conferences

- **COMPSTAT (Athens, Greece), planned** 2026
Talk: Projection depth for functional data
- **ICORS (Istanbul, Turkey), planned** 2026
Talk: Projection depth for functional data
- **EYSM (Vilnius, Lithuania), planned** 2026
Talk: On the theory of scatter halfspace depth
- **ROBUST (Srní, Czech Republic)** 2026
Poster and talk: Projection depth for functional data
- **EcoSta (Tokyo, Japan)** 2025
Talk: Regularized projection depth
- **IWFOS (Novara, Italy)** 2025
Poster: A comparison of band-based approaches to functional depth
- **ICORS (Stresa, Italy)** 2025
Talk: Location and scatter halfspace depth for alpha-symmetric distributions
- **CMStatistics (London, UK)** 2024
Talk: Concentration inequalities for location and scatter halfspace median under contaminated alpha-symmetric distributions
- **ROBUST (Bardejov, Slovakia)** 2024
Poster and talk: Halfspace depth for location and scatter: robustness and minimax optimality

Honors and Awards

- **Award for Outstanding Student Presentation (Doctoral Research Category)** 2026
ROBUST 2026 Conference
- **1st place in Competition for the best master's thesis** 2024
Department of Probability and Mathematical Statistics, Charles University
- **2nd place in Competition for university students in mathematical research (SVOČ)** 2023
Czech Mathematical Society
- **Josef Štěpán's award for outstanding bachelor's thesis** 2022
Department of Probability and Mathematical Statistics, Charles University
- **Scholarship for excellent academic performance** 2021, 2022, 2023
Charles University

Other Skills and Experience

- **Teaching experience:** Python for Data Science, Mathematical Statistics 2
- **Refereeing:** Computational Statistics
- **Mathematical & Statistical software:** R, Wolfram Mathematica
- **Programming:** Python, Machine Learning & Deep Learning libraries
- **Micro-credentials:** Deep Learning (level 7 of EQF)
- **Languages:** English (fluent), Slovak (native)
- **Extracurricular:** Certified Neapolitan pizza maker