



Seminar Hora Informaticae

Institute of Computer Science, Prague

Tuesday, January 21, 2025, **13.30 - 15.30 (1.30 - 3:30 PM)** CET

Meeting Room 318, Address: Pod Vodárenskou věží 2, Prague 8

Meeting ID: 914 0834 4018, Passcode: 668534



<https://cesnet.zoom.us/j/91408344018?pwd=x2QlZ4F42BxIMSmWc1HOwHHA7Uw7PN.1>

Zdeňek Fabián, Institute of Computer Science, Czech Academy of Sciences:

New Functions Characterizing Continuous Distributions.

A continuous probability measure on the open interval of the real line induces on it its own metric, expressed by a function we call the score function of distribution. Using it, new alternative characteristics and functions of continuous variables can be introduced. Equipped by parameters, the score function of distribution appears to be the proper scalar-valued inference function even for models with vector parameter. This provides new tools for solving statistical problems, particularly in situations where it is necessary to consider models far from normal. We summarize basic concepts, recent highlights and some new results of this new perspective and a brief discussion of possible applications.

References:

- [1] Fabián, Z. 2021. Mean, mode or median? The score mean. *Communs. Stat. Theory Methods* 50, 2360-2370.
- [2] Fabián, Z. 2023. A measure of variability within parametric families of continuous distributions. *Communs. Stat. Theory Methods* 53, 3568–3580.
- [3] Fabián, Z. 2023. Score correlation. *Research in Statistics* 1,1. DOI: 10.1080/27684520.2023.2216686.
- [4] Fabián, Z. 2024. Information and uncertainty of continuous distributions. Under the review in *Communs. Stat. Theory Methods*.

Zdeňek Fabián (<https://www.cs.cas.cz/staff/fabian/cv/en>) graduated from the MFF KU, majoring in geophysics, where he spent the next twenty years working on seismic measurements. After moving to the Institute of Computer Science of the AS CR, he developed a relationship between the continuous probability measure and the metric of the space on which the measure is defined. This relationship has both probabilistic and statistical implications, which he continues to study to this day.

HORA INFORMATICAЕ (meaning: TIME FOR INFORMATICS) is a broad-spectrum scientific seminar devoted to all core areas of computer science and its interdisciplinary interfaces with other sciences and applied domains. Original contributions addressing classical and emerging topics are welcome. Founded by Jiří Wiedermann, the seminar is running since 1994 at the Institute of Computer Science of the Czech Academy of Sciences in Prague.

<https://www.cs.cas.cz/horainf>