



Matrix differential calculus with applications in statistical learning

行列微分法：統計的学習への応用

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Matrix differential calculus with applications in statistical learning

Matrix differential calculus plays a very important role in statistical learning and data science. In this talk, we start with a big picture of mathematics (including calculus, linear algebra, probability, and statistics), useful to statistical learning. We then pay particular attention to matrix differential calculus and its applications to the multivariate linear model, including efficiency comparisons, sensitivity analysis, and statistical diagnostics.

Biography:

Dr. Shuangzhe Liu is currently the group lead of data science, Faculty of Science and Technology at the University of Canberra in Australia. He obtained his PhD in Econometrics from the Tinbergen Institute, University of Amsterdam, the Netherlands, specializing in matrix differential calculus, multivariate analysis, and statistical learning. His extensive expertise is evidenced by his various publications in prestigious journals in the fields of mathematics, statistics, and related areas. Additionally, he has co-authored a comprehensive book on time series analysis using SAS Enterprise Guide. Demonstrating a strong commitment to advancing statistical and data science knowledge, Shuangzhe actively contributes to the field as an Associate Editor for multiple statistical journals and holds an Editor position at Statistical Papers.