ΠΑΝΕΠΙΣΤΗΜΙΟ ΠΕΙΡΑΙΩΣ

ΣΧΟΛΗ ΧΡΗΜΑΤΟΟΙΚΟΝΟΜΙΚΗΣ ΚΑΙ ΣΤΑΤΙΣΤΙΚΗΣ

ΤΜΗΜΑ ΣΤΑΤΙΣΤΙΚΗΣ ΚΑΙ ΑΣΦΑΛΙΣΤΙΚΗΣ ΕΠΙΣΤΗΜΗΣ

ΠΡΟΣΚΛΗΣΗ

Σας προσκαλούμε στην **ομιλία** του **Δρ. Κωνσταντίνου Μπουραζά, Τμήμα Στατιστικής, Οικονομικό Πανεπιστήμιο Αθηνών** η οποία θα διεξαχθεί την **Παρασκευή 12 Απριλίου 2024, ώρα 16:00** στην **Αίθουσα 339** (3ος όροφος, Κεντρικό Κτίριο), με θέμα:

Predictive Ratio Cusum (PRC): A Bayesian Approach in Online Change Point Detection of Short Runs

Abstract/Περίληψη: The online quality monitoring of a process with low-volume data is a challenging task, and the attention is most often placed on detecting when some of the underlying (unknown) process parameter(s) experience a persistent shift. Self-starting methods, both in the frequentist and the Bayesian domain aim to offer a solution. Adopting the latter perspective, we propose a general closed-form Bayesian scheme, named Predictive Ratio CUSUM (PRC). The testing procedure is built on a memory-based control chart that relies on the cumulative ratios of sequentially updated predictive distributions. The derivation of the control chart's decision-making threshold, based on false alarm tolerance, along with closed-form conjugate analysis, accompanies the testing. The theoretic framework of PRC can accommodate any likelihood from the regular exponential family, while the appropriate prior setting allows the use of different sources of information, when available. An extensive simulation study evaluates the performance against competitors and examines the robustness under different prior settings, while applications to continuous and discrete real data sets illustrate its practical use.

Short Bio: Konstantinos Bourazas obtained his BSc in the Department of Mathematics of the University of Patras in 2009 and his MSc and PhD in the Department of Statistics at the Athens University of Economics and Business in 2014 and 2021 respectively. Furthermore, he was a postdoctoral researcher at the KIOS Research and Innovation Center of Excellence, University of Cyprus (2022-2024), at the Department of Statistical Sciences, Università Cattolica del Sacro Cuore, Milan (2021-2022), and at the Department of Mathematics, University of Ioannina (2021-2023). Currently, he is a Post-Doctoral Researcher at the Department of Economics, and an adjunct lecturer at the Department of Statistics, Athens University of Economics and Business. His research interests are in the areas of Statistical Process Control and Monitoring, Bayesian Statistics, Change Point Models, Replication Studies, and Applied Statistics. He won the Brumbaugh Award 2024 with Frédéric Sobas and Panagiotis Tsiamyrtzis for the work “Predictive ratio CUSUM (PRC): A Bayesian approach in online change point detection of short runs” as the publication with the largest single contribution to the development of industrial application of quality control in 2023. Finally, his teaching experience is mainly in Probability and Statistics, Data Analysis with R, and Data Visualization with Tableau.