Oum El Bouaghi University - Algeria
Faculty of Economic, Commercial and Management Sciences

Jointly with
Financial Accounting, Taxation and Insurance Laboratory
&
Innovation and Financial Engineering Laboratory

Organizes

National Conference On:

Econometric Models and Machine Learning Algorithms in Quantitative Economic Research: Complementarity or Opposition

November 5th – 6th, 2025

***Honorary President**: PR.ZOHIR DIBI,*
Rector of University
***General Supervisor**: PR. DJEBAR BOUKETIR,*
Dean of Faculty
***Conference Chair**: PR.ABDELOUAHID SERARMA*
***Scientific Committee Chair**: PR.MED ELAMIN WALID TALEB*
***Organizing Committee Chair**: DR.NAOUFEL BAALOUL*

Preamble:

Classical econometric models have served as the methodological foundation of quantitative economics, offering rigorous frameworks for causal inference through structured parametric assumptions. By isolating relationships between variables, they enable policy decisions anchored in statistically verifiable, theory-consistent evidence. Their enduring relevance stems from interpretable outputs aligned with established paradigms, ensuring credibility in policy evaluation. The rise of artificial intelligence (AI) and big data analytics has transformed economic methodologies. Machine learning (ML) algorithms, capable of processing high-dimensional, unstructured datasets, outperform traditional techniques in modeling nonlinear phenomena (e.g., financial volatility, dynamic consumer behavior). Leveraging novel data—such as high-frequency transactions and digital traces—ML expands empirical inquiry's granularity, addressing limitations of conventional econometrics.

However, ML's adoption remains debated. A central critique focuses on its opacity: algorithmic "black boxes" obscure causal pathways, hindering theoretical validation. This interpretability gap limits applicability in policy contexts requiring transparency and theoretical coherence.

While ML enhances predictive accuracy, its inductive, data-driven approach diverges from econometrics' deductive causal rigor. Bridging this methodological divide—reconciling ML's predictive power with econometrics' interpretability—represents a pivotal challenge for advancing economic research in the AI era.

Conference Questions:

In this context, a scientific question emerges: Is it possible to integrate the classical and modern approaches, or should one be chosen over the other depending on the research question and study objectives?

Conference objectives:

The Conference aims to achieve the following objectives:

-Analyze methodological and theoretical differences between statistical models and machine learning algorithms.
-Examine case studies applying these methods in economic research.
-Discuss the balance between predictive accuracy and interpretability of results.
-Offer recommendations on choosing the appropriate methodology based on research objectives and data characteristics.
-Foster dialogue between economists and statisticians.

Conference Topics:

Addressing the problem of this conference is based on the following tracks:

1-Theoretical and Conceptual Foundations of the Differences and Integration between Econometric Models and ML Algorithms

- Theoretical Foundations of the Econometric Models and Machine Learning Algorithms
-Differences and complementarities between econometric models and machine learning algorithms.
-The role of assumptions, interpretation, and inference in economic modeling.

2-Methodological Approaches and Best Practices

-Criteria for choosing econometric models or machine learning methods in economic research.
-Strategies for integrating machine learning algorithms into traditional econometrics.

3-Applications and Case Studies

Empirical comparisons between econometric models and machine learning algorithms in economic forecasting.
Practical examples in finance, economics, and public policy evaluation.

4- Challenges and Future Prospects

-Challenges in balancing model complexity with predictive accuracy.
-Ethical and methodological issues related to the use of machine learning in economics.
-The future of economic modeling in the age of artificial intelligence.

Call for Papers :

It is recommended that each participant meet the following conditions:
- Papers can be written and presented in Arabic, English or French.
- Research papers should represent the original work.
- Comply in his/here contribution with one of the conference strands or revolve around an issue closely related to the problem of the conference.

-Papers can be submitted individually or in pairs only.
Please download the template from the link below and follow the attached format carefully:

https://drive.google.com/file/d

-Research papers should be sent to:
https://forms.gle/SSu
- The submitted papers will be sent to scientific committee of the conference for the expertise in a confidential manner. Researchers, whose papers are accepted, will receive a notification of acceptance.

Public Concerned:

- Teachers and researchers, experts and specialists in Algerian economics;
- administrative competencies of the economic sectors in Algeria.

Registration:

Registration fees :
- 1000 DZD for PhD students.
2000 DZD for Teachers, researchers & professional)

Important Dates:

submission deadline : September 30th 2025
Acceptance notification : October 15th 2025
Conference dates : November 5th- 6th 2025

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