Artificial Intelligence and Statistics
navigating potentials, pitfalls, and use (by F. Felice)

Discussion

LSS & STATEC Economic Seminar - 21 December 2023

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A balanced perspective on AI

- **The history of AI and its fascinating developments in recent years**

    ➢ *AI is a long and continuous process. It has made great progress in recent decades, thanks to increased computing power and data storage capacity.*

- **Focus on generative AI capabilities**

    ➢ *Generating images, coding or documents; text classification, sentiment analysis, language understanding etc.*

    ➢ *Huge potential of AI*

- **Arising concerns**

    ➢ *Plagiarism, cheating, intellectual property, toxicity and hallucinations*

    ➢ *What about trust and credibility?*

- **Call for a "responsible" AI**

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Text classification

- Household Budget Survey (HBS)

  ➢ *Automatic classification of products according to COICOP categories*

- European Statistics on Income and Living Conditions (EU-SILC)

  ➢ *Automatic classification of ISCO and NACE information*

- Other possible applications of AI?

  ➢ *Police reports on road accidents: analysis of textual information*

  ➢ *Analysis of qualitative studies*

  ➢ *Sentiment analysis (e.g. social media)*

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Generating texts, messages and documents

- Invitation letters

- Newsletters

- Automatic Q & A

- Responses to complaints

- What about more analytical publications?

- What about more sophisticated design and communication material (e.g. videos)?

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Other possible applications of AI

- Generating computer scripts

- Questionnaire translation

- Training

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AI and Statistics: destruction or transformation?

- What would a statistical office look like in the future? Are the following roles at risk of being replaced by AI?

    - *Statisticians/Methodologists/Survey managers?*

    - *Economists/Researchers/Data analysts?*

    - *IT staff/Software programmers?*

    - *Communication and design?*

- What about new AI jobs? Data scientist? AI "whisperer"?

- How will current and future employees need to be trained and prepared for these new technologies? Job destruction or transformation?

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Responsible AI

- Six responsible AI dimensions: Fairness, Explainability, Robustness, Privacy and Security, Governance and Transparency

- Extremely important to a National Statistical Institute, such as STATEC, for which trust and credibility is key

- Is it still conceivable given the tremendous ongoing developments and the tough economic competition between the different actors?

- Necessary to "ride the wave" and make these new technologies ours

- Time frame? 10-20 years?

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Data Science Lab with University Support

Data is a key tool for policy makers to respond to changes in a society and the challenges everyday people are facing. That is why Luxembourg's National Institute of statistics and economic studies, STATEC has launched a partnership with the University of Luxembourg's Interdisciplinary Centre for Security, Reliability and Trust (SnT) to set-up an in-house Data Science Lab. This lab will focus on developing and implementing AI tools that support STATEC's mission in Luxembourg.

Thank you!

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