

4th IFC and Bank of Italy Workshop on “Data Science in Central Banking”

18-20 February 2025, Rome, Italy

Conference location on 18-19 February 2025: Centro Carlo Azeglio Ciampi (Via Nazionale, 190 – 00184 - Roma)

Conference location on 20 February 2025: Sala Emeroteca, Banca d'Italia (Via Nazionale, 91 – 00184 - Roma)

Programme¹

Day 1: 18 February 2025

<i>Time (CET)</i>	<i>Topic</i>	<i>Presenter marked in bold</i>
10:00 – 10:20	IFC welcome	Alberto Naudon , IFC Chair, Central Bank of Chile
10:20 – 11:20	Keynote speech: Tailoring small language models for enterprise use cases	Julien Simon , Chief Evangelist at Arcee.ai
11:20 – 12:35	Session 1.1 – Adoption of generative AI in central bank operations	Chair: Eric Anvar , OECD
	<ul style="list-style-type: none"> Results of IFC survey on central banks’ use of artificial intelligence and machine learning 	Alberto Naudon , IFC Chair, Central Bank of Chile
	<ul style="list-style-type: none"> Harnessing generative AI: the strategic roadmap of Bank of Spain 	Mónica Molés Ramos , Bank of Spain
	<ul style="list-style-type: none"> Innovation project: large language model adaptation at Latvijas Banka 	Mārtiņš Liberts and Rihards Ostrovskis, Bank of Latvia
	<ul style="list-style-type: none"> A natural language processing toolbox for the National Bank of Romania 	Claudia Voicilă , National Bank of Romania
12:35 – 14:00	Lunch break	
14:00 – 15:00	Session 1.2 – Natural language processing tools for enhanced text analysis	Chair: Roeland Beerten , National Bank of Belgium

¹ Timing: 15 minutes per presentation; Q&A at the end of the session.

	<ul style="list-style-type: none"> Transforming survey analysis: tools for central banks 	Nicholas Gray and Dominic Jones , Reserve Bank of Australia
	<ul style="list-style-type: none"> From text to insights: AI-based topic modeling for central banking applications 	Felix Marx, Marlena Pietsch , Diana Sola , Michaela Vollmer and Babak Zandi, Deutsche Bundesbank
	<ul style="list-style-type: none"> Efficacy of AI RAG tools for complex information extraction and data annotation tasks on bank documents 	Nicholas Botti , Flora Haberkorn and Shaun Khan, Board of Governors of the Federal Reserve System
15:00 – 16:00	Session 1.3 – Generative AI for summarisation and information extraction	Chair: Bruno Tissot , BIS
	<ul style="list-style-type: none"> BankGPT: the use of Large Language Models in official communications 	Claudia Biancotti, Carolina Camassa, Marco Fruzzetti, Luigi Palumbo and Myriam Portaluri, Bank of Italy
	<ul style="list-style-type: none"> Extracting economic issues from news data: with the help of generative AI 	Younghwan Lee , Bank of Korea
	<ul style="list-style-type: none"> What skills are employers looking for? Applying generative AI to Danish job postings 	Per Andersen and Erik Grenestam , Danmarks Nationalbank
16:00 – 16:45	Coffee break	
16:45 – 17:45	Session 1.4 – Text analysis for market monitoring and monetary policy purposes	Chair: Giuseppe Bruno , Bank of Italy
	<ul style="list-style-type: none"> The global database for central bank communications 	Cory Baird , Fitch Group / GeoQuant, Jonathan Benchimol, Bank of Israel, Vira Vyshnevskaya, KDI School, Igor Vyshnevskiy, and Wook Sohn, Woosong University
	<ul style="list-style-type: none"> Read between the headlines: can news data predict inflation? 	Alan Chester Arcin, Ma. Ellysah Joy Guliman, Genna Paola Centeno, Jacqueline Margaux Herbo, Sanjeev Parmanand and Cherrie Mapa , Bangko Sentral ng Pilipinas (Philippines)
	<ul style="list-style-type: none"> The impact of monetary surprises on exchange rates: insights from a textual analysis approach on a panel of countries 	Jean-Charles Bricongne , Bank of France, and Louis Marolleau , Lille University
17:45	Close of day 1	

Day 2: 19 February 2025

<i>Time (CET)</i>	<i>Topic</i>	<i>Presenter marked in bold</i>
09:00 – 10:00	Session 2.1 – Using text analysis for novel economic insights	Chair: Giuseppe Bruno , Bank of Italy
	<ul style="list-style-type: none"> Turbulent times: capturing social unrest in the news 	Flora Haberkorn , April Patel and Zach Proom, Board of Governors of the Federal Reserve System
	<ul style="list-style-type: none"> Evaluating the effect of geoeconomic fragmentation on cross-border equity fund flows in the EMEAP region 	Paul Luk , Johnny Cheung and Ronald Yip, Hong Kong Monetary Authority
	<ul style="list-style-type: none"> Indexing and visualization of climate narratives using BERT and causal extraction 	Noriyasu Kaneda , Bank of Japan, and Hiroki Sakaji, Hokkaido University
10:00 – 10:30	Coffee break	
10:30 – 11:30	Session 2.2 – AI in supervisory technology and financial regulation	Chair: Douglas Araujo , BIS
	<ul style="list-style-type: none"> GenAI in action: transforming data use in SupTech 	Patrick Hoffmann , Maha El Dimachki, Kenneth Gay, Sivasubramanian Ramanathan, and Harry Lee, BIS Innovation Hub
	<ul style="list-style-type: none"> AI-driven legal summarization for financial regulation monitoring 	Diana López Avilés and Isidora Díaz Jorquera , Central Bank of Chile
	<ul style="list-style-type: none"> A novel multi-step prompt approach for LLM-based Q&As on banking supervisory regulation 	Daniele Licari , Canio Benedetto, Daniele Bovi, Praveen Bushipak, Alessandro De Gregorio , Marco De Leonardis and Tommaso Cucinotta, Bank of Italy
11:30 – 12:30	Session 2.3 – Advanced forecasting and data analytics techniques	Chair: Juri Marcucci , Bank of Italy
	<ul style="list-style-type: none"> Project Neo - gaining economic insights with AI and novel data 	Rachel Arulraj-Cordonier , Marko Nanut Petric, Flurina Strasser, BIS Innovation Hub
	<ul style="list-style-type: none"> Enhancing external debt nowcasting: a data-driven approach using advanced analytics 	Candra Puspita Dewi , Aditya Wisnugraha Sugiyarto and Sony Panji Wicaksono , Bank Indonesia

	<ul style="list-style-type: none"> Generalised weighted framework for synthetic data evaluation 	Chiung Ching Ho , Central Bank of Malaysia
12:30 – 14:00	Lunch break	
14:00 – 15:15	Session 2.3 - continued -	
	<ul style="list-style-type: none"> Dynamic consumer cash inventory model 	Kim P. Huynh , Alex Shcherbakov and André Stenzel, Bank of Canada
	<ul style="list-style-type: none"> Istanbul electricity demand forecast with artificial neural networks 	Hayriye Yasak Özkal , Buse Kaylan, Meltem Sipahi, Prof. Dr. Muammer Altan Çakir, Central Bank of the Republic of Türkiye / Istanbul Technical University
	<ul style="list-style-type: none"> Forecasting influenza-like illness in Italy using Wikipedia: a principal component regression approach 	Gianluca Mura , Bank of Italy
	<ul style="list-style-type: none"> A Foundational Model for Macroeconomic Time Series Forecasting and Nowcasting 	Batuhan Koyuncu, Byeungchun Kwon, Marco Lombardi, Fernando Perez-Cruz and Hyun Song Shin, BIS
15:15	End of presentations	
17:00 – 19:00	Cultural event	
19:00 – 22:00	Social dinner	
22:00	Close of day 2	

Day 3: 20 February 2025

<i>Time (CET)</i>	<i>Topic</i>	<i>Presenter marked in bold</i>
09:00 – 09:15	Special feature: Data science: the role of statisticians	Elisabetta Carfagna , International Statistics Institute (ISI)
09:15 – 10:15	Session 3.1 – Data privacy and anonymization	Chair: Adam Cap , BIS
	<ul style="list-style-type: none"> Data anonymization principles at Banco de Portugal 	Ana F Carvalho, Francisco Fonseca , Mário Lourenço and Ricardo Marques, Banco de Portugal

	<ul style="list-style-type: none"> Generative AI in payments: secure synthetic data and more 	Ajit Desai , Colin Jones and Masoud Nasari, Bank of Canada
	<ul style="list-style-type: none"> Data sharing conundrum? In fully homomorphic encryption we (must) trust 	Mirko Avantaggiato, Adriano Baldeschi , Giuseppe Bruno and Andrea Capitanelli, Bank of Italy
10:15 – 11:30	Session 3.2 – Metadata and data integration with SDMX	Chair: Rafael Schmidt , BIS
	<ul style="list-style-type: none"> Metadata integration as a key enabling technique for AI and ML 	Thomas Gottron and Daniel Suranyi, European Central Bank (ECB)
	<ul style="list-style-type: none"> SDMX chatbot – a trustworthy assistant to navigate the SDMX documentation 	Samuel Melm and Brian Buffett, BIS
	<ul style="list-style-type: none"> sdmx.io – where tools and learning resources come together to address official statistics use cases 	Brian Buffett and Douglas Araujo , BIS
	<ul style="list-style-type: none"> SDMX enabled users' processes at the Bank of Italy 	Attilio Mattiocco and Valentino Pinna , Bank of Italy
11:30 – 12:00	Coffee break	
12:00 – 13:00	Session 3.3 – AI assisted data search and retrieval	Chair: Mónica Molés Ramos , Bank of Spain
	<ul style="list-style-type: none"> Supporting users in seeking data on the ECB data portal: a use case for retrieval augmented generation 	Luca Petracca , Alessandro Cortese, Simone De Benedictis , Thomas Gottron, Zlatina Hofmeister, ECB
	<ul style="list-style-type: none"> Using RAG and LangChain to drive chatbots for interactive economic data analysis and insight 	Seah Boon Keong , Eilyn Chong and Max Chew, Central Bank of Malaysia
	<ul style="list-style-type: none"> Leveraging generative AI for granular credit data utilization: a multi-agent approach 	Nontawit Cheewaruangroj , Kawinwish Laobundit, Peranut Nimitsurachat, Supachai Saengthong, Skunpoj Thanarojsophon and Anak Yodpinyanee, Bank of Thailand
13:00 – 13:15	Closing remarks	Paolo Angelini , Deputy Governor of the Bank of Italy
13:15	End of workshop	