PERSONAL INFORMATION

Filip-Mihai TOMA

București, Romania

Sex Male | Date of birth 20/06/1989 | Nationality Romanian

WORK EXPERIENCE

May 2024 - present	**Model manager ESG scores**
	London Stock Exchange Group Bucharest (LSEG)
	▪ Research in Environmental, Social and Governance scoring (ESG) ▪ Manage, supervise and validate ESG and Sovereign climate model scores ▪ Develop data science related projects using LLM-AI ▪ Engage with various stakeholders to ensure smooth adequate implementation of models
	Business or sector Finance / Technology
Apr 2022 – present	**Postdoc research scholar (visitor at Caltech since April 2024)**
	California Institute of Technology (Caltech)
	▪ Research in behavioral and decision neuroscience ▪ Design and conduct behavioral neuroscience experiments on decision-making under risk and uncertainty ▪ Main projects: 1. Supernormal stimuli and the peak-shift effect with the goal to better understand consumer choice behavior with implications for marketing, product design and pricing 2. Forecasting financial bubble crashes using experimental neuroscience methods to explain irrational behavior during financial crises with implications for investment banks to adapt investment strategies and maximize profitability
	Business or sector Academia / research
Sep 2021 - Apr 2022	**Fulbright visiting scholar**
	California Institute of Technology (Caltech)
	▪ Independently coordinated a research project to understand individuals' reluctance to wear masks during COVID19 with impact in other fields such as corporate policy optimization or climate change
	Business or sector Academia / research
Apr 2018 – Sep 2021	**Expert financial risk engineer**
	Finastra Bucharest
	▪ **Project manager Artificial Intelligence** team: o Develop ML natural language processing algorithms for improved work productivity using Python and Tensorflow o Assign and distribute tasks for data curation, pre-processing, programming and implementation of software; o Supervise timely delivery of project, ensure permanent communication among technical and functional staff; o Project led to increase of 300 mhrs in terms of productivity; ▪ **Project manager Quantitative Risk Finance** team: o Weekly quant board meetings on quantitative topics (i.e. derivatives valuation, risk mgt., curve generation etc.); o Contribute to developing internal database of documentation; o Assist non-technical people in reaching solutions from a functional vantage point. ▪ Perform **consulting** in topics pertaining to risk management issues and financial engineering on o Risk-free-rates module for SOFR and ESTR; o Valuation of fixed income products, swaps, swaptions, options, CDS and FX products; o Market risk management; Principal component analysis; o Credit risk management, CDS module and curve bootstrapping. ▪ **Perform C++ investigations** to solve issues related to risk and financial engineering topics.
	Business or sector Financial technology

Sep 2015 - April 2018	**Economist**
	National Bank of Romania
	▪ Performed analyses on the stability of Romanian financial markets, through daily reporting on vulnerabilities from various perspectives: systemic, credit, liquidity and/or market risk; ▪ Elaborated impact studies on the dynamics of local and international financial markets from a financial stability perspective; ▪ Performed analyses on the impact of macroprudential measures and evaluation of macroprudential intermediary objectives; ▪ Participated in the identification of systemically important banks from the Romanian banking sector; ▪ Supported National Committee for Macroprudential Oversight – member of the NCMO Secretariat – conduct analyses from a systemic risk perspective, draft presentations; ▪ Expressed point of views regarding documents elaborated by the NBR or other institutions regarding financial stability; ▪ Elaborate sections from the Financial Stability Review – financial markets and macroprudential policy; ▪ Supervised the validation of internal risk models (credit and operational risk) for two top banks from the Romanian banking sector (> 2 bln. EUR in assets)
	Business or sector Central banking
Oct 2013 – Jul 2018	**Assistant teacher**
	Bucharest University of Economic Studies
	▪ Undergraduate teaching: ▪ Financial Engineering - 3rd year BSc; - International Finance - 3rd year BSc; - Economics of Money, Banking and Financial Markets - 1st year BSc; ▪ Presentations on Neuroeconomics, Financial Econometrics (Matlab and EViews), Risk Management, Fixed Income Financial Instruments – 1st year MSc (CEFIN): http://cefin.ase.ro/index.php/cercetare/intalnirile-cefin ;
	Business or sector Academia
Aug 2013 - Sep 2015	**Functional derivatives consultant**
	Misys International Financial Systems
	▪ **Consulting** for investment bank clients in the Summit software mainly on **Front and Middle Office Analytics**: 1. Investment banking products and derivatives: Interest Rate, Equity, Fixed income, FX, Money market, Exotic; 2. Fixed income pricing analytics and Equity and FX valuation (Black Scholes models, Cox Ross Rubinstein etc.); 3. Risk management: Market risk and credit risk analysis, Historical, Parametric and Monte Carlo VaR. ▪ Offered **training** to functional and technical staff (beginner and intermediate) on Historical Value at Risk; ▪ Provided **quick** and **able solutions** towards solving the root causes of the reported problems; ▪ Provided quantitative explanations for the reported problems with number reconciliations (Summit vs. MS Excel). ▪ Partaken in the **implementation of the Summit software** (V5.7) for one of the largest investment banks worldwide – coordinated issues which have arisen along the testing time-line, kept permanent communication with bank representatives, coordinated consultants to provide solutions for timely resolutions of all business critical problems; ▪ **Customer Advocate** for the above bank - a bridge between in-house and on-site testing of the Summit software; ▪ Whenever situations required it, operated in **C++** and **SQL** languages in order to pinpoint the very-low level software behaviors which impeded bank users in taking full advantage of the pricing and risk modules.
	Business or sector Financial Markets, Financial software, Banking
May 2011 – June 2011	**IT Technician Analyst**
	Stefanini TechTeam Global
	▪ Communicating with clients, either by telephone or e-mail in assisting them with general IT issues: installation/un installation of software, network operations (working with Active Directory and Exchange Servers); ▪ Remote connection on computers in order to solve any IT issue regarding: software functionality, Office functionality and operating system functionality; Internet connection problems or printing issues; ▪ The activity was carried out in French and English.
	Business or sector IT

EDUCATION AND TRAINING

Oct 2013 – July 2018	**PhD in Finance** Bucharest University of Economic Studies, Department of Money and Banking **Thesis: The neuroeconomics of financial markets** **Brief synopsis**: • Studied financial decision-making from various perspectives: behavioral and experimental finance with and without methods from neuroscience, by developing experimental and controlled micro-markets. • Developed two innovative experiments: the first neurofinance experiment in Romania to study the neural correlates of bubble formation and the first experimental market for dynamic trading in Romania (see publication list below)
Oct 2011 – July 2013	**MSc in Finance and Banking** Bucharest University of Economic Studies **Thesis**: **Estimating market risk using an asymmetric GARCH model and Extreme Value Theory** ▪ 2nd year: ERASMUS at Université Paris Dauphine – Erasmus, Major in Econometrics, Time series analysis and risk management ▪ 1st year: MSc in Banking, MSBANK, Faculty of Finance and Banking
Oct 2008 – July 2011	**BSc in Finance and Banking** Bucharest University of Economic Studies ▪ **Thesis: Correlations between the monetary policy, inflation and exchange rate dynamics**

PERSONAL SKILLS

Mother tongue(s): Romanian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C2	C2	C2	C2	C2
	Cambridge Advanced English (2007)				
French	C1	C1	C1	C1	C1

Communication skills
▪ Excellent communication skills gained through my experience as an assistant teacher, project manager and in other roles

Organisational / managerial skills
▪ Project management skills acquired in my previous role at Finastra where I supervised a team of 8 people

SELF-ASSESSMENT				
Information processing	Communication	Content creation	Safety	Problem solving
Proficient	Proficient	Proficient	Independent	Proficient

Digital competences
ML/AI: **Python, Anaconda, Tensorflow and associated libraries**
Econometric and numeric software: **Matlab, SPSS, EEGLAB, EViews, RStudio, Stata, Gauss**
Office package: **Word, Excel, PowerPoint, Outlook**
Working-level knowledge of **C++** and **Java, SQL**
Experience with **Jira, Salesforce** and **Agile**
Financial markets software: **SUMMIT**

Driving licence: Yes, B category

ADDITIONAL INFORMATION

Publications	• **Toma, F-M**., Cepoi, C.O., Kubinschi, M. and Miyakoshi, M. (2023) Gazing through the bubble: an experimental investigation into financial risk-taking using eye-tracking, Financial Innovation. • **Toma, F-M**. (2023) A hybrid neuro-experimental decision support system to classify overconfidence and performance in a simulated bubble using a passive BCI (2022), *Expert Systems with Applications*, https://doi.org/10.1016/j.eswa.2022.118722 • **Toma, F-M**. and Miyakoshi, M. (2021) Left Frontal EEG Power Responds to Stock Price Changes in a Simulated Asset Bubble Market, *Brain Sciences*, 11(6), 670; DOI: 10.3390/brainsci11060670 • **Toma, F-M**., Cepoi C. and Negrea, B. (2020) Does it payoff to be overconfident? Evidence from an emerging market – a quantile regression approach, *Finance Research Letters*, https://doi.org/10.1016/j.frl.2020.101480 • Negrea, B. and **Toma, F-M**. (2017) Dynamic CAPM under ambiguity – an experimental approach, *Journal of Behavioral and Experimental Finance*, https://doi.org/10.1016/j.jbef.2017.09.001 • **Toma, F-M**. and Kubinschi, M. (2017) Economic Sentiment Impact on Macroeconomic Dynamics in Emerging Market Economies Proceedings of the 29th International Business Information Management Association Conference – IBIMA, Vienna, 3-4 May 2017, http://ibima.org/conference/29th-ibima-conference/ • **Toma, F-M**., Cepoi, C.O, Kubinschi, M. and Damian, V. (2017) High-Frequency Volatility Forecasting in Emerging Markets: A Comparative Approach, Proceedings of the 29th International Business Information Management Association Conference – IBIMA, Vienna, 3-4 May 2017, http://ibima.org/conference/29th-ibima-conference/ • Cepoi, C.O. and **Toma, F-M**. (2016) Estimating probability of informed trading on the Bucharest Stock Exchange (2016), *Czech Journal of Economics and Finance – Finance-a-Uver*, vol. 66(2), http://journal.fsv.cuni.cz/mag/article/show/id/1352 • **Toma, F-M.** (2015) Behavioral biases of the investment decisions of Romanian investors on the Bucharest Stock Exchange (2015) - *Procedia Economics and Finance*, Emerging Market Queries in Finance and Business Conference, doi: 10.1016/S2212-5671(15)01383-0
Work in progress	• **Toma, F-M**., Henning, T., Ross, S., Smith, A. and Camerer, C. - Using attention and emotional measures to forecast experimental asset bubble crashes • **Toma, F-M.**, Kang, Z., Tashijan, S., Shimojo, S., Mobbs, D. and Camerer, C. - Supernormal stimuli and the peak-shift in humans • **Toma, F-M.**, Krisst, L., Shehata, M., Wu, D-W. and Shimojo, S. -Wear a mask or get fined? An investigation into decision-making under risk and uncertainty using EEG and eye tracking. • **Toma, F-M.**, Noguchi, M., Cole, E., Marks, M., Shehata, M., Wu, D-W. and Shimojo, S. - Neural networks vs. humans in assessing trademark similarities. • Hyon, J., **Toma, F-M.**, Shehata, M. - RHYTHME: A Real-time HYperscanning pyTHon MEthod for EEG analyses
Projects	• Supernormal stimuli and the peak shift effect in humans, funded by Chen Neuroscience Institute from Caltech, Apr. 2022 – Apr. 2024 • Using attention and emotional measures to forecast experimental asset bubble crashes , funded by the Linde Institute, Jan 2024 – Sept 2024

Conferences	• **International Conference in Experimental Finance**, Sofia, Bulgaria (**June 2023**) Supernormal stimuli and finance applications • **Society for Neuroeconomics Conference,** Vancouver, Canada (**Oct 2023**) Supernormal stimuli and the peak shift effect in humans • **WEAI conference**, San Diego, July 2nd – July 6th, Session chair – Behavioral decision making
Memberships	• Society for Experimental Finance • Society for Neuroeconomics
Courses	- Summer school in data science and artificial intelligence, Caltech, July 2022 - Machine learning and artificial neural networks, Udemy, April 2020 - FRM – Financial Risk Manager Certificate passed level 1, May 2019. - Shanghai Summer School in Neuroeconomics, New York University in Shanghai, 7-21 July, 2019 - Risk management and financial supervision, Bank of England, London, 1-5 October 2017 - Financial risk management, Luxembourg School of Finance, 25-30 September 2016