

# Marco PATACCA

## PERSONAL DATA

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PLACE AND DATE OF BIRTH: Todi, Italy | 05 January 1990  
EMAIL: [marco.patacca@unipg.it](mailto:marco.patacca@unipg.it)  
ORCID: [orcid.org/marcopatacca](https://orcid.org/marcopatacca)  
LinkedIn: [linkedin.com/in/marcopatacca](https://linkedin.com/in/marcopatacca)

## CURRENT POSITION

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JUL 2023 - Present **Assistant Professor (RTDb)**  
*University of Perugia, Department of Economics, Perugia, Italy*

## PREVIOUS POSITIONS

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OCT 2022 - Jul 2023 **Assistant Professor (RTDb)**  
*University of Rome Tor Vergata, Department of Economics and Finance, Rome, Italy*

MAR 2020 - Oct 2022 **Assistant Professor (RTDa)**  
*University of Verona, Department of Economics, Verona, Italy*

JAN 2020 - Feb 2020 **Official**  
*Ministry of Economy and Finance, Department of Finance, Rome, Italy*

Nov 2018 - Dec 2019 **Post-Doctoral Researcher**  
*Léonard de Vinci Pôle Universitaire, Research Center, Paris, France*

## NATIONAL SCIENTIFIC QUALIFICATION (ASN)

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Nov 2024 **National scientific qualification (ASN) as associate professor**  
*Scientific sector STAT-04/A (ex SECS-S/06)*  
*Mathematical methods of economics, finance and actuarial sciences*

## EDUCATION

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A.Y. 2017 - 2018 **Ph.D. in ECONOMICS: Quantitative Methods for Economics**  
(Scientific sector STAT-04/A (ex SECS-S/06) - XXXI Cycle)  
*Department of Economics, University of Perugia, Perugia, Italy*  
Thesis: *Essays on Bitcoin Price Dynamics*  
Supervisor: Prof. Gianna FIGÀ TALAMANCA

A.Y. 2014 - 2015 **Master's Degree in FINANCE AND QUANTITATIVE METHODS FOR ECONOMICS**  
110/110 magna cum Laude  
*Department of Economics, University of Perugia, Perugia, Italy*  
Thesis: *The Extreme Value Theory in the Modelling of Catastrophic Risks*  
Supervisor: Prof. Mauro PAGLIACCI

A.Y. 2011 - 2012 **Bachelor's Degree in ECONOMICS OF MARKETS AND FINANCIAL INTERMEDIARIES**  
grade 107/110  
*Department of Economics, University of Perugia, Perugia, Italy*  
Thesis: *The Cornish-Fisher Expansion in the Analysis of Financial Portfolio's Performance* | Supervisor: Prof. Gianna FIGÀ TALAMANCA

## INTERNATIONAL EXPERIENCES

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Nov 2017 - DEC 2017 **Visiting Scholar** - Department of Finance and Risk Engineering, *New York University, New York, USA*

JAN 2017 - MAR 2017 **Visiting Scholar** - Department of Statistics, *The London School of Economics and Political Science, London, UK*

## ADDITIONAL TRAINING

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- AUG 2016 **ARPM Bootcamp, Advanced Risk and Portfolio Management**  
*New York University, New York, USA*
- JUL 2013 **EF Cambridge English Level Test**  
*EF International Language Centers, Dublin, Ireland*
- A.Y. 2010 - 2011 **Degree in Saxophone**  
*Academy of Music of Perugia, Perugia, Italy*

## RESEARCH INTERESTS

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Mathematical Finance, Financial Econometrics, FinTech, Machine Learning, Sentiment Analysis, Blockchain Technology, Cryptocurrencies.

## PUBLICATIONS

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- Cretarola, Alessandra, Figà-Talamanca, Gianna, Patacca, Marco (2024). "Option pricing in a sentiment-biased stochastic volatility model". *ANNALS OF FINANCE*, Springer. ISSN 1614-2454. doi: 10.1007/s10436-024-00448-3. URL <https://doi.org/10.1007/s10436-024-00448-3>.
- Di Persio, Luca, Gnoatto, Alessandro, Patacca, Marco (2024). "A Change of Measure Formula for Recursive Conditional Expectations". *INTERNATIONAL JOURNAL OF THEORETICAL AND APPLIED FINANCE*, World Scientific Publishing Company. ISSN 0219-0249. doi: 10.1142/S0219024924500080. URL <https://doi.org/10.1142/S0219024924500080>.
- Cafferata, Alessia, Patacca, Marco, Tramontana, Fabio (2024). "Disposition Effect and its Outcome on Endogenous Price Fluctuations". *DECISIONS IN ECONOMICS AND FINANCE*, Springer International Publishing. ISSN 1593-8883. doi: 10.1007/s10203-023-00431-z. URL <https://doi.org/10.1007/s10203-023-00431-z>.
- Figà-Talamanca, Gianna, Fronzetti Colladon, Andrea, Guardabascio, Barbara, Patacca, Marco, Segneri, Ludovica (2024). "Assessing the Impact of Climate and Environmental News on Financial Markets". In: Corazza, M. et al. (eds). *Mathematical and Statistical Methods for Actuarial Sciences and Finance*. MAF 2024. Springer Nature Switzerland AG 2024, pp. 167-171. ISBN 978-3-031-64273-9. doi: 10.1007/978-3-031-64273-9\_28. URL [https://doi.org/10.1007/978-3-031-64273-9\\_28](https://doi.org/10.1007/978-3-031-64273-9_28).
- Cretarola, Alessandra, Figà-Talamanca, Gianna, Patacca, Marco (2023). "Sentiment-driven mean reversion in the 4/2 stochastic volatility model with jumps". *APPLIED STOCHASTIC MODELS IN BUSINESS AND INDUSTRY*, John Wiley & Sons Ltd. ISSN: 1526-4025. doi: 10.1002/asmb.2763. URL <https://doi.org/10.1002/asmb.2763>
- Figà-Talamanca, Gianna, Focardi, Sergio, Mazza, Davide, Patacca, Marco (2023). "Cryptocurrencies as a Driver of Innovation for the Monetary System". In Chou, D., O'Sullivan, C., Papavassiliou, V. (eds). *FINTECH RESEARCH AND APPLICATIONS*, World Scientific, pp. 143-176. ISBN: 978-1-80061-271-6. doi: 10.1142/9781800612723\_0003. URL [https://doi.org/10.1142/9781800612723\\_0003](https://doi.org/10.1142/9781800612723_0003).
- Figà-Talamanca, Gianna, Patacca, Marco (2022). "An explorative analysis of sentiment impact on S&P 500 components returns, volatility and downside risk". *ANNALS OF OPERATIONS RESEARCH*, Springer. ISSN 1572-9338. doi: 10.1007/s10479-022-05129-w. URL <https://doi.org/10.1007/s10479-022-05129-w>.
- Di Persio, Luca, Lavagnoli, Emanuele, Patacca, Marco (2022). "Calibrating FBSDEs Driven Models in Finance via NNs". *RISKS*, vol. 10, no. 12:227, MDPI. ISSN 2227-9091. doi: 10.3390/risks10120227. URL <https://www.mdpi.com/2227-9091/10/12/227>.
- Figà-Talamanca, Gianna, Focardi, Sergio, Patacca, Marco (2021). "Regime switches and commonalities of the cryptocurrencies asset class". *THE NORTH AMERICAN JOURNAL OF ECONOMICS AND FINANCE*, vol. 57, p. 101425-101439, Elsevier. ISSN 1062-9408. doi: 10.1016/j.najef.2021.101425. URL <https://doi.org/10.1016/j.najef.2021.101425>.
- Figà-Talamanca, Gianna, Focardi, Sergio, Patacca, Marco (2021). "Common dynamic factors for cryp-

- tocurrencies and multiple pair-trading statistical arbitrages". DECISIONS IN ECONOMICS AND FINANCE, Springer International Publishing. ISSN 1593-8883. doi: 10.1007/s10203-021-00318-x. URL <https://doi.org/10.1007/s10203-021-00318-x>.
- Patacca, Marco, Focardi, Sergio (2021). "The Quantitative Easing Bursts Bitcoin Price". ACCOUNTING AND FINANCE RESEARCH, vol. 10, n. 3, p. 65-71, Sciedu Press. ISSN 1927-5986. doi: 10.5430/afr.v10n3p65. URL <https://doi.org/10.5430/afr.v10n3p65>.
  - Cretarola, Alessandra, Figà-Talamanca, Gianna, Patacca, Marco (2020). "Market attention and Bitcoin price modeling: theory, estimation and option pricing". DECISIONS IN ECONOMICS AND FINANCE, vol. 43, p. 187-228, Springer International Publishing. ISSN: 1593-8883. doi: 10.1007/s10203-019-00262-x. URL <https://doi.org/10.1007/s10203-019-00262-x>
  - Figà-Talamanca, Gianna, Patacca, Marco (2020). "Disentangling the relationship between Bitcoin and market attention measures". ECONOMIA E POLITICA INDUSTRIALE, vol. 47, p. 71-91, Springer International Publishing. ISSN: 0391-2078. doi: 10.1007/s40812-019-00133-x. URL <https://doi.org/10.1007/s40812-019-00133-x>.
  - Figà-Talamanca, Gianna, Patacca, Marco (2019). "Does Market Attention Affect Bitcoin Returns and Volatility?" DECISIONS IN ECONOMICS AND FINANCE, vol. 42, p. 135-155, Springer International Publishing. ISSN: 1593-8883. doi: 10.1007/s10203-019-00258-7. URL <https://doi.org/10.1007/s10203-019-00258-7>.
  - Bistarelli, Stefano, Cretarola, Alessandra, Figà-Talamanca, Gianna, Patacca, Marco (2019). "Model-based arbitrage in multi-exchange models for Bitcoin price dynamics". DIGITAL FINANCE, vol. 1, p. 23-46, Springer International Publishing. ISSN: 2524-6984. doi: 10.1007/s42521-019-00001-2. URL <https://doi.org/10.1007/s42521-019-00001-2>.
  - Bistarelli, Stefano, Cretarola, Alessandra, Figà-Talamanca, Gianna, Mercanti, Ivan, Patacca, Marco (2019). "Is Arbitrage Possible in the Bitcoin Market? (Work-In-Progress Paper)". In: Coppola M., Carlini E., D'Agostino D., Altmann J., Bañares J. (eds) Economics of Grids, Clouds, Systems, and Services. GECON 2018. LECTURE NOTES IN ARTIFICIAL INTELLIGENCE, vol 11113, pp. 243-251. Springer, Cham. ISBN: 978-3-030-13341-2, ISSN: 0302-9743. doi: 10.1007/978-3-030-13342-9\_21. URL [https://doi.org/10.1007/978-3-030-13342-9\\_21](https://doi.org/10.1007/978-3-030-13342-9_21).
  - Cretarola, Alessandra, Figà-Talamanca, Gianna, Patacca, Marco (2018). "A Continuous Time Model for Bitcoin Price Dynamics". In: Corazza, M., Durbán, M., Grané, A., Perna, C., Sibillo, M. (eds). Mathematical and Statistical Methods for Actuarial Sciences and Finance. MAF 2018. Springer International Publishing AG, part of Springer Nature 2018, pp. 273-277. ISBN 978-3-319-89823-0. doi: 10.1007/978-3-319-89824-7\_49. URL [https://doi.org/10.1007/978-3-319-89824-7\\_49](https://doi.org/10.1007/978-3-319-89824-7_49).

## CONFERENCES, SEMINARS AND WORKSHOPS

- June 23-27, 2025. **12th General AMAmEF Conference**, University of Verona, Verona, Italy. Oral presentation, "Asset Pricing under Volatility and Jumps Driven by Investor Sentiment".
- April 15-17, 2025. **XXVI Workshop on Quantitative Finance (QFW 2025)**, University of Palermo, Palermo, Italy. Oral presentation, "Asset Pricing under Volatility and Jumps Driven by Investor Sentiment".
- January 30-31, 2025. **International Fintech Research Conference Finance, technology, methodologies**, University of Perugia, Perugia, Italy. Member of the organizing committee.
- September 5-7, 2024. **48<sup>th</sup> Annual Meeting of the AMASES "Association for Mathematics Applied to Social and Economic Sciences"**, University of Naples - Federico II, Ischia, Italy. Oral presentation, "Climate news attention and the volatility of financial and energy markets".
- April 11-13, 2024. **XXV Workshop on Quantitative Finance (QFW 2024)**, University of Bologna, Bologna, Italy. Oral presentation, "Option pricing in a sentiment-biased stochastic volatility model".
- September 20-22, 2023. **47<sup>th</sup> Annual Meeting of the AMASES "Association for Mathematics Applied to Social and Economic Sciences"**, University of Milano - Bicocca, Milano, Italy. Organizer of the session "The impact of sentiment and attention in financial markets: stocks, commodities and cryptocurrencies", and oral presentation, "Sentiment-driven mean reversion in the 4/2 stochastic volatility model with jumps".

- April 20-22, 2023. **XXIV Workshop on Quantitative Finance (QFW 2023)**, University of Cassino, Gaeta, Italy. Oral presentation, "Sentiment-driven mean reversion in the 4/2 stochastic volatility model with jumps".
- December 14, 2022. **Le sfide della finanza decentralizzata**, University of Perugia, Perugia, Italy. Oral presentation, "Blockchain e crypto-assets".
- October 27-28, 2022. **International Fintech Research Conference Finance, technology, methodologies**, Politecnico di Milano, Milano, Italy. Oral presentation, "Cryptocurrencies connections in financial markets".
- September 22-24, 2022. **46<sup>th</sup> Annual Meeting of the AMASES "Association for Mathematics Applied to Social and Economic Sciences"**, University of Palermo, Palermo, Italy. Oral presentation, "Cryptocurrencies connections in financial markets".
- May 25-27, 2022. **9th International Conference on Risk Analysis (ICRA9)**, University of Perugia, Perugia, Italy. Oral presentation, "Investor sentiment as driver of financial stock market".
- April 28-30, 2022. **Financial Regulation & Technology: Advances since the Financial Crisis (65th Meeting EWG/CFM)**, HOFSTRA University, New York, United States. Oral presentation, "An explorative analysis of sentiment impact on S&P 500 components returns, volatility and downside risk".
- March 31-April 01, 2022. **XXIII Workshop on Quantitative Finance (QFW 2022)**, University of Rome Tor Vergata, Rome, Italy. Oral presentation, "An explorative analysis of sentiment impact on S&P 500 components returns, volatility and downside risk".
- November 04-05, 2021. **3rd Crypto Asset Lab Conference (CAL2021)**, University of Milano-Bicocca, Milano, Italy. Oral presentation, "Common dynamic factors for cryptocurrencies and multiple pair-trading statistical arbitrages".
- June 22-25, 2021. **10th General AMaMeF Conference**, University of Padova (Virtual Conference), Padova, Italy. Oral presentation, "Regime switches and commonalities of the cryptocurrencies asset class".
- January 28-29, 2021. **XXII Workshop On Quantitative Finance (QFW 2021)**, University of Verona (Virtual Conference), Verona, Italy. Member of the organizing committee.
- December 19-21, 2020. **14th International Conference on Computational and Financial Econometrics (CFE-CMStatistics 2020)**, King's College London (Virtual Conference), London, United Kingdom. Oral presentation, "Common dynamic factors for cryptocurrencies and multiple pair-trading statistical arbitrages".
- September 09-11, 2019. **43<sup>rd</sup> Annual Meeting of the AMASES "Association for Mathematics Applied to Social and Economic Sciences"**, University of Perugia, Perugia, Italy. Oral presentation, "Cointegration analysis of cryptocurrencies".
- June 23-26, 2019. **30th European Conference on Operational Research (EURO 2019)**, University College Dublin, Dublin, Ireland. Oral presentation, "Cointegration analysis of cryptocurrencies".
- June 15-16, 2019. **Cryptocurrency Research Conference 2019**, Southampton Business School, Southampton, United Kingdom. Oral presentation, "Regime switching analysis of cryptocurrencies".
- November 22, 2018. **Université Paris Diderot**, Paris, France. Cryptofinance seminar, "Bitcoin prices and market attention".
- September 13-15, 2018. **42<sup>nd</sup> Annual Meeting of the AMASES "Association for Mathematics Applied to Social and Economic Sciences"**, University of Naples Parthenope, Napoli, Italy. Oral presentation, "A Sentiment-Based Model for the Bitcoin: Theory, Estimation and Option Pricing".
- July 08-11, 2018. **29th European Conference on Operational Research (EURO 2018)**, Valencia, Spain. Oral presentation, "Does market attention affect Bitcoin returns and volatility?".
- May 11, 2018. **Department of Statistics and Quantitative Methods, Milano Bicocca University**, Milano, Italy. Doctoral seminar, "Bitcoin prices and market attention".
- January 24-26, 2018. **XIX Workshop on Quantitative Finance 2018**, University of Roma Tre, Roma, Italy. Poster presentation, "Does market attention affect Bitcoin returns and volatility?".

- January 25-27, 2017. **XVIII Workshop on Quantitative Finance 2017**, University of Milano-Bicocca, Milano, Italy. Poster presentation, “Bitcoins prices and market sentiment indicators”.

## RESEARCH PROJECTS

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- Member of the research project **Argomentazione Astratta, Text Mining e Network Analysis per il Supporto alle Decisioni (RATIONALISTS)**. Grant No. WP4.1 of Piano di Ateneo delle azioni collaborative e trasversali, Fondo Ricerca di Ateneo, esercizio 2022 (2023-2025), funded by “University of Perugia”.
- Member of the research project **AIDMIX-Artificial Intelligence for Decision making: Methods for Interpretability and eX-plainability**. Grant No. Fondo Ricerca di Ateneo, esercizio 2021, funded by “University of Perugia”.
- Member of the research project **Analisi d’impatto degli investimenti socialmente responsabili sul rischio sistemico**. Grant No. 2017.0226.021, co-funded by “Fondazione Cassa di Risparmio di Perugia” and “Department of Economics of the University of Perugia”.
- Member of the research project **Le sfide socio-economiche e di regolamentazione nel settore FinTech, all’incrocio tra tecnologia e finanza**. Grant No. 2018.0427.021, co-funded by “Fondazione Cassa di Risparmio di Perugia” and “Department of Economics of the University of Perugia”.
- Member of the research project **Moneytrack**, Grant No. “24ème Appel à Projets du Fonds Unique Interministériel (FUI)”, co-funded by “Banque publique d’investissement française Bpifrance” and “École supérieure d’ingénieurs Léonard-de-Vinci”.

## EDITOR ACTIVITY

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- Guest Editor for the Special Issue in **Quantitative methods in Fintech: Bridging Theory and Practice** for the Journal *Decisions in Economics and Finance*, Springer, ISSN 1593-8883. <https://link.springer.com/journal/10203/updates/27716606>
- Guest Editor for the Special Issue in **New Approaches in Economics and Finance** for the Journal *Risks*, MDPI, ISSN 2227-9091. [https://www.mdpi.com/journal/risks/special\\_issues/76F1FM65B1](https://www.mdpi.com/journal/risks/special_issues/76F1FM65B1)

## REFEREING ACTIVITY

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SIAM Journal on Financial Mathematics, Journal of Financial Econometrics, Information Sciences, Annals of Operations Research, Plos One, Decisions in Economics and Finance, European Journal of Finance, Applied Economics, Economic Modelling, International Review of Economics and Finance, Risks, Digital Finance.

## SCIENTIFIC ASSOCIATIONS MEMBERSHIP

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- AMASES (Association for Mathematics Applied to Economic and Social Sciences)
- Fintech Research Network

## AWARDS

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**AMASES 2018 Best Paper Award**, The paper “A Sentiment-Based Model for the Bitcoin: Theory, Estimation and Option Pricing” has been ranked among the 4 finalist paper for the AMASES 2018 Best Paper Award.

## TEACHING EXPERIENCES

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|------------------|---|
| A.Y. 2024 - 2025 | <b>Lecturer</b> of OPTIMIZATION IN ECONOMICS AND FINANCE (Ph.D. course)<br><i>University of Perugia, Perugia, Italy</i>     |
| A.Y. 2024 - 2025 | <b>Lecturer</b> of MATHEMATICAL METHODS FOR RISK MANAGEMENT (Master course)<br><i>University of Perugia, Perugia, Italy</i> |
| A.Y. 2024 - 2025 | <b>Lecturer</b> of BASIC CALCULUS (Bachelor course)<br><i>University of Perugia, Perugia, Italy</i>                         |
| A.Y. 2023 - 2024 | <b>Lecturer</b> of OPTIMIZATION IN ECONOMICS AND FINANCE (Ph.D. course)<br><i>University of Perugia, Perugia, Italy</i>     |
| A.Y. 2023 - 2024 | <b>Lecturer</b> of MATHEMATICAL METHODS FOR RISK MANAGEMENT (Master course)<br><i>University of Perugia, Perugia, Italy</i> |
| A.Y. 2023 - 2024 | <b>Lecturer</b> of BASIC CALCULUS (Bachelor course)<br><i>University of Perugia, Perugia, Italy</i>                         |
| A.Y. 2022 - 2023 | <b>Lecturer</b> of OPTIMIZATION IN ECONOMICS AND FINANCE (Ph.D. course)<br><i>University of Perugia, Perugia, Italy</i>     |
| A.Y. 2022 - 2023 | <b>Lecturer</b> of MATHEMATICAL FINANCE (Bachelor course)<br><i>University of Rome Tor Vergata, Rome, Italy</i>             |
| A.Y. 2022 - 2023 | <b>Lecturer</b> of COMPUTATIONAL METHODS FOR FINANCE (Master course)<br><i>University of Verona, Verona, Italy</i>          |
| A.Y. 2021 - 2022 | <b>Lecturer</b> of COMPUTATIONAL METHODS FOR FINANCE (Master course)<br><i>University of Verona, Verona, Italy</i>          |
| A.Y. 2020 - 2021 | <b>Lecturer</b> of COMPUTATIONAL METHODS FOR FINANCE (Master course)<br><i>University of Verona, Verona, Italy</i>          |
| A.Y. 2020 - 2021 | <b>Lecturer</b> of MATHEMATICAL FINANCE (Bachelor course)<br><i>University of Verona, Verona, Italy</i>                     |
| A.Y. 2018 - 2019 | <b>Lecturer</b> of ECONOMETRICS (Master course)<br><i>Ecole Supérieure d'Ingénieurs Léonard de Vinci, Paris, France</i>     |
| A.Y. 2018 - 2019 | <b>Teaching Assistant</b> of BASIC CALCULUS (Bachelor course)<br><i>University of Perugia, Perugia, Italy</i>               |
| A.Y. 2017 - 2018 | <b>Teaching Assistant</b> of BASIC CALCULUS (Bachelor course)<br><i>University of Perugia, Perugia, Italy</i>               |
| A.Y. 2016 - 2017 | <b>Teaching Assistant</b> of BASIC CALCULUS (Bachelor course)<br><i>University of Perugia, Perugia, Italy</i>               |
| A.Y. 2015 - 2016 | <b>Teaching Assistant</b> of BASIC CALCULUS (Bachelor course)<br><i>University of Perugia, Perugia, Italy</i>               |
| A.Y. 2014 - 2015 | <b>Teaching Assistant</b> of FINANCIAL MATHEMATICS (Bachelor course)<br><i>University of Perugia, Perugia, Italy</i>        |

## LANGUAGES

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ITALIAN: Mother tongue  
ENGLISH: C1

## COMPUTER SKILLS

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Software: Matlab, Mathematica, R, Python, SAS,  $\text{\LaTeX}$   
Office and Others: Word, Excel, PowerPoint, Windows

June 2025