

Dr. Nikolaos (Nick) C. POULIOS

CONTACT INFORMATION

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NATIONALITY Greek

RESEARCH INTERESTS

Dynamical Systems, ODEs, Complex Systems, Graph Theory, Machine Learning, Knowledge Graphs, Mathematical Data Science, Random Matrix Theory, Stochastic Processes, Optimization, Computational Algebra/Geometry.

CURRENT ACADEMIC APPOINTMENTS

Research Associate, [Technical University of Leoben, Austria](#) November 2022 to Today
Focus area: Data Analytics
PostDoc, [National and Kapodistrian University of Athens, Greece](#) March 2023 to February 2026

- Supervisor: Prof. Ioannis Leventides
- Topic: ODE's and PDE's theory and applications
- [Laboratory of Analytics and Data Science](#), National and Kapodistrian University of Athens

EDUCATION

National and Kapodistrian University of Athens (NKUA), Greece

Ph.D. in Economics, Domain of Mathematics and Informatics, [Department of Economics](#),
(Approved with Distinction) February 2022

- Thesis Topic: *On the stability of random matrices.*
- Adviser: Prof. Ioannis Leventides
- Areas of Study: Dynamical Systems, Dynamical Networks, Graph Theory, Randomness, Almost Zeros Polynomials, Random Matrix Theory

MSc in Algorithms, Logic And Discrete Mathematics July 2026

- Thesis Topic: Elliptic curves in cryptography (On-going)
- Inter-Institutional Graduate Programm
 - Department of Mathematics (NKUA)
 - Department of Informatics and Telecommunications (NKUA)
 - School of Electrical and Computer Engineering (NTUA)

Democritus University of Thrace (DUTH), Greece

MSc in in Quantum Computing and Quantum Technologies December 2026

- Inter-Institutional Graduate Programm
 - The Department of Electrical and Computer Engineering, Democritus University of Thrace (DECE)
 - The National Centre of Scientific Research "Demokritos" (INN-D)

National Technical University of Athens (NTUA), Greece

MSc in Applied Mathematical Sciences, School of Applied Mathematical and Physics Science, Department of Mathematics November 2016

- Thesis Topic: *Multidimensional Scaling in Multivariable Statistical Analysis*
- Adviser: Professor George Kokolakis
- Area of Study: Multivariate Statistics, Probability Theory

National and Kapodistrian University of Athens (NKUA), Greece

- Major: Mathematics, Informatics
- Minor: Finance

- AWARDS
- Scholarships from SAAS-Maxwell Institute for Mathematical Sciences & Herriot-Watt University (I didn't accept it), 2011
 - €200,00 Award and Prize from Samarinaion Community due to Bachelor graduation, 2011
 - Excellence and Progress Prize, on 3rd year at High School, (Grade: Excellent 18.2/20), 2000
- RESEARCH GRANTS & PROJECT APPLICATIONS
- 1st Summer School in Data Analytics, Technical University of Leoben, Austria, 2026, Awaiting Decision
 - Certified Citizen Data Scientist, SuccessFactory GmbH, Austria, 2025, Submitted
 - Analysing legal decisions of the Greek High Court by utilising AI, HFRI, Greece, Not Funded, 2020
 - Topological Data Analysis with applications to COVID-19, HFRI, Greece, Not Funded, 2020
- REFEREE IN JOURNALS
- Austrian Journal of Statistics
 - Financial Statistical Journal
- REFEREED JOURNAL PUBLICATIONS
- [Leventides et al.(2021a)Leventides, Karcianas, and Poullos] J Leventides, N Karcianas, and N C Poullos. The notion of almost zeros and randomness. *IMA Journal of Mathematical Control and Information*, 04 2021a. ISSN 1471-6887. doi:10.1093/imamci/dnab008. URL <https://doi.org/10.1093/imamci/dnab008>.
- [Leventides et al.(2024a)Leventides, Livada, Poullos, and Poullos] J. Leventides, M. Livada, N. Poullos, and C. Poullos. Asset distribution evolution via random transactions. *Machine Learning and Big Data Analytics*, 2024a.
- [Leventides and Poullos(2020)] John Leventides and Nick Poullos. *Diffusion on Dynamical Interbank Loan Networks*, pages 339–367. Springer International Publishing, Cham, 2020. ISBN 978-3-030-55857-4. doi:10.1007/978-3-030-55857-4_13. URL https://doi.org/10.1007/978-3-030-55857-4_13.
- [Leventides et al.(2021b)Leventides, Poullos, and Poullos] John Leventides, Nick Poullos, and Costas Poullos. Random matrices and controllability of dynamical systems. *IMA Journal of Mathematical Control and Information*, 05 2021b. ISSN 1471-6887. doi:10.1093/imamci/dnab011. URL <https://doi.org/10.1093/imamci/dnab011>.
- [Leventides et al.(2024b)Leventides, Melas, Poullos, Livada, Poullos, and Boufounou] John Leventides, Evangelos Melas, Costas Poullos, Maria Livada, Nick C. Poullos, and Paraskevi Boufounou. Application of the fractal brownian motion to the athens stock exchange. *Fractal and Fractional*, 8(8), 2024b. ISSN 2504-3110. doi:10.3390/fractalfract8080454. URL <https://www.mdpi.com/2504-3110/8/8/454>.
- [Livada et al.(2025)Livada, Melas, and Poullos] Maria Livada, Evangelos Melas, and Nick C. Poullos. *Demand Aggregation and Mid-Term Energy Planning Problem on the Business Layer*, pages 117–134. Springer Nature Switzerland, Cham, 2025. ISBN 978-3-031-78369-2. doi:10.1007/978-3-031-78369-2_8. URL https://doi.org/10.1007/978-3-031-78369-2_8.
- [Melas and Poullos(Accepted)] Evangelos Melas and Nick C. Poullos. Statistical Investigations in the Collatz Conjecture. *Discrete and Continuous Dynamical Systems*, Accepted.

- [Melas et al.(2023)Melas, Poullos, Camouzis, Leventides, and Poullos] Evangelos Melas, Costas Poullos, Elias Camouzis, John Leventides, and Nick Poullos. Study of the hypergeometric equation via data driven koopman-edmd theory. *Axioms*, 12(2), 2023. ISSN 2075-1680. doi:10.3390/axioms12020134. URL <https://www.mdpi.com/2075-1680/12/2/134>.
- [Poullos and Poullos(Under review)] Costas Poullos and Nick Poullos. Non-local approximation of nonlinear systems arising from ODES via EDMD methods. Under review.
- [Poullos et al.(2025a)Poullos, Melas, Poullos, Livada, and Leventides] Costas Poullos, Evangelos Melas, Nick C. Poullos, Maria Livada, and John Leventides. *A Mathematical Study of the Braess's Paradox Within a Network Comprising Four Nodes, Five Edges, and Linear Time Functions*, pages 223–232. Springer Nature Switzerland, Cham, 2025a. ISBN 978-3-031-78369-2. doi:10.1007/978-3-031-78369-2_12. URL https://doi.org/10.1007/978-3-031-78369-2_12.
- [Poullos(Working paper)] Nick C. Poullos. Knowledge Graphs for Engineers. Working paper.
- [Poullos et al.(2025b)Poullos, Melas, and Livada] Nick C. Poullos, Evangelos Melas, and Maria Livada. The minimum cost energy flow problem under demand uncertainty. effect on optimal solution, variability, worst- and best-case scenarios. In Ashkan Nikeghbali, Panos M. Pardalos, and Michael Th. Rassias, editors, *Optimization, Discrete Mathematics and Applications to Data Sciences*, pages 211–221. Springer Nature Switzerland, Cham, 2025b. ISBN 978-3-031-78369-2. doi:10.1007/978-3-031-78369-2_11. URL https://doi.org/10.1007/978-3-031-78369-2_11.

CONFERENCE TALKS

- [1] Multivariate Polynomials, Parameterized Algorithms and Complexity, Department of Informatics and Telecommunications, NKUA, Greece, June 2024
- [2] Introduction to the R package TDA, Computational Geometry, Department of Informatics and Telecommunications, NKUA, Greece, June, 2024
- [3] 7th Bremen Summer School and Symposium, Dynamical systems - pure and applied, Department of Mathematics, University of Bremen, Bremen, Germany, August 5-9, 2019
- [4] Diffusion on Dynamical interbank loan networks, 26th Summer School - Conference "Dynamical System and Complexity", NTUA, Athens, Greece, July 07-14, 2019

GRADUATE ADVISING

- [1] Mr. B. M., Montanuniversität Leoben, Austria, 2026 (In-progress)
- [2] Mr. O. B., Montanuniversität Leoben, Austria, 2023 (completed, 22.Feb.)
- [3] Mr. A. P., Montanuniversität Leoben, Austria, 2024 (completed, 05.Sep.)

PROJECT ADVISING

- [1] Mr. Y. C., Montanuniversität Leoben, Austria, 2026 (In-progress)
- [2] Mr. M. B., Montanuniversität Leoben, Austria, 2026 (In-progress)
- [3] Mr. S. R., Montanuniversität Leoben, Austria, 2024 (completed, 31.Jun.)
- [4] Mr. S. R., Montanuniversität Leoben, Austria, 2024 (completed, 27.Sep.)

CONFERENCE
POSTERS

- [1] 7th Bremen Summer School and Symposium, Dynamical systems - pure and applied, Department of Mathematics, University of Bremen, Bremen, Germany, August 5-9, 2019
- [2] Diffusion on Dynamical interbank loan networks, 26th Summer School - Conference "Dynamical System and Complexity", NTUA, Athens, Greece, 07-14.07.2019

TEACHING
EXPERIENCE

Montanuniversität Leoben, Leoben, Styria, Austria

Head Instructor, Department of Economics and Business Management

- An Introduction to Entrepreneurship **Fall 2022-23**
- An introduction to Data Analytics (with R/Python) **Spring 2022-23**
- Effective Problem Solving **Fall 2023-24**
- Cost Accounting - Exercises **Fall 2023-24**
- An introduction to Data Analytics (with R/Python) **Spring 2023-24**
- Cost Accounting - Exercises **Fall 2024-25**
- Effective Problem Solving **Fall 2024-25**
- An Introduction to Data Analytics (with R/Python) **Spring 2024-25**
- Management Systems **Spring 2024-25**
- An Introduction to Data Analytics (with R/Python) **Spring 2025-26**
- Digital Economics **Spring 2025-26**

Instructor, Department of Information Technology

- An introduction to Digitization **Spring 2022-23**
- An introduction to Digitization **Fall 2023-24**
- An introduction to Digitization **Fall 2024-25**
- An introduction to Digitization **Fall 2025-26**

National and Kapodistrian University of Athens, Athens, Greece

Teaching Assistant, Department of Economics (NKUA)

- Dynamical Mathematics (Lab), **Evaluation (EN)** **Fall 2020-21**
- Mathematics II, **Evaluation (GR)** **Spring 2019-20**
- Dynamical Mathematics (Lab) **Fall 2019-20**
- Introduction to Mathematics **Fall 2019-20**

Private Teaching, **2013-21**

PROFESSIONAL
MEMBERSHIPS

- American Mathematical Society (AMS), Member
- European Mathematical Society (EMS), Member
- Society for Industrial and Applied Mathematics (SIAM), Member
- London Mathematical Society, Member (LMA), Member
- Institute of Mathematics and its Applications (IMA), Member
- Hellenic Mathematical Society, Member
- Economic Chamber of Greece, Member

CERTIFICATION

- Microsoft Dynamics Academy training, elev8 & Microsoft, **2022**
- Applications developing with Relational Database Management System (RDBMS), Hellenic Republic, Ministry of Interior Management Reconstruction, Athens, Certification Code: 11.10.132.1091 **2018**
- Distance learning with Python 3, Hellenic Republic, Ministry of Interior & Management Reconstruction, Athens, Certification Code: 11.10.408.210 **2018**

- Statistics inference with statistical software, Hellenic Republic, Ministry of Interior & Management Reconstruction, Athens, Certification Code: 11.10.113.412 **2017**
- An introduction to Front-end-web development, Tech Talent School HTML5/CSS3 for beginners **2017**
- European Stability Mechanism, Fiscal Deficit & Public Debt, Hellenic Republic, Ministry of Interior & Management Reconstruction, Athens, Certification Code: 11.10.284.287 **2016**

CONFERENCES -
WORKSHOPS

International

- The Oxford Summer School in Economic Networks, Mathematical Institute, Oxford University, U.K. **22-26.06.2019**
- [7th Bremen Summer School and Symposium](#), Department of Mathematics, Bremen University, Bremen, Germany **05-09.08.2019**

Greece

- [Athens Cryptography Day](#), NTUA, Athens, Greece **23.05.2024**
- [Eighth Summer School in Operator Theory](#), NKUA, Athens, Greece **08-13.07.2019**
- [Dynamical Systems and Complexity](#), NTUA, Athens, Greece **14-20.07.2019**
- [Summer Meeting of Young Researchers in Mathematics](#), NKUA, Athens, Greece **16-17.07.2019**
- 2nd Summer School in Mathematics: Numerical Analysis for Deterministics Stochastics Differential Equations, School of Applied Mathematical and Physical Sciences, NTUA, Athens, Greece **10-13.07.2018**
- [Athens Probability Qolloquium](#), Department of Mathematics, NKUA, Athens, Greece **2018**
- Summer School in Operator Theory, Department of Mathematics, University of Aegean, Chios, Greece **25-30.07.11**

HARDWARE AND
SOFTWARE SKILLS

Computer Programming:

- Python, Lisp, Prolog, Visual Basic, SQL, C

Numerical Analysis & Statistics:

- MATLAB, Wolfram Mathematica, Maxima, R (Tidtvorse, R Markdown, Quarto)

Desktop Editing and Productivity Software:

- Emacs, Vim, Sublime Text
- T_EX (L^AT_EX, B_IB_TE_X),
- Microsoft Office, OpenOffice.org, LibreOffice, Google Docs
- Moodle

Operating Systems:

- Linux, Microsoft Windows family, Apple OS X

REFERENCES
AVAILABLE TO
CONTACT

John. Leventides (e-mail: ylevent@econ.uoa.gr; phone: +30-210-368-9412)

- Professor, [Department of Economics, National and Kapodistrian University of Athens](#)
- ◊ Dept of Economics, 1, Sofokleous & Aristidou str., office 611, PO 10559, Athens, Greece
- ★ *Prof. Leventides was not only PhD thesis supervisor but also is my current postdoctoral supervisor, as well.*

Themistocles M. Rassias (e-mail: trassias@math.ntua.gr)

- Professor, [Department of Mathematics, National Technical University of Athens](#)
- ◊ Department of Mathematics, National Technical University of Athens (NTUA), PO: 157 80, Zografou Campous, Athens, Greece
- ★ *Prof. Rassias was a Professor in my postgraduate studies at the NTUA.*

Michael (Michail) Th. Rassias (e-mail: mthrassias@yahoo.com)

- Associate Professor, Department of Mathematics and Engineering, [Hellenic Military Army](#)
- ◊ Department of Mathematics and Engineering Sciences, Hellenic Military Academy, PO: 16673, Vari Attikis, Greece
- ★ *Ass. Prof. Rassias was a supervisor member of my PhD thesis.*

LANGUAGES

- Greek (maternal)
- English (fluent)
- German (intermediate)

MORE
INFORMATION

More information and auxiliary documents can be found at
<https://nickpoulios.xyz/>.