Andreea-Iulia **Lefterovici**

Institute for Theoretical Physics, Leibniz University Hannnover,
Appelstraße 2, 30167 Hannover, Germany

 0172 8704748 | andreea.lefterovici@gmail.com | andreea-iulia-lefterovici

Work Experience

innovailia UG
Hannover, Germany

FOUNDER AND CEO — *Apr 2025 - Now*

- I founded a creative agency doing science communication for academia deep-tech companies. The project emerged from the BMBF project QuBRA, backed-up by Prof. Tobias Osborne as co-founder. Our website is www.innovailia.com.
- Organically boosted engagement on LinkedIn page for a quantum computing company in 30 days from 6% to 30%, and gained 183 new followers.
- Organically grew QIG YouTube channel in 5 months by 500 followers.
- Within 6 months we successfully completed 8 projects, have 5 ongoing ones, and 2 planned for next year.

Quantagonia GmbH
Munich, Germany

FOUNDERS ASSOCIATE INTERN — *Sept 2024 - Mar 2025*

- I wrote a successful BMFTR project proposal involving both quantum software and hardware for early fault-tolerant era.
- Business development: search for potential investors, I wrote blog articles and use cases explanations.

Institute for Theoretical Physics, Leibniz University Hannover
Hannover, Germany

RESEARCHER — *Dec 2021 - Now*

- Development of techniques for assessing the performance of quantum computers in solving real benchmark instances for industrial problems.
- Supervision of six Bachelor theses
- Founder of the Scicomm Club of Quantum Information Group

Institute for Theoretical Physics, University of Cologne
Cologne, Germany

MASTER'S THESIS IN THEORETICAL CONDENSED MATTER — *Sept 2020 - Nov 2021*

- Analytical study of the bulk and boundary of disordered class AII topological insulators.

University of Bucharest
Bucharest, Romania

MASTER'S THESIS IN STRING THEORY — *June 2020 - June 2021*

- Analytical study of the Maldacena conjecture.

Horia Hulubei National Institute of Physics and Nuclear Engineering
Bucharest, Romania

BACHELOR'S THESIS IN NUCLEAR PHYSICS — *March 2018 - June 2018*

- Study of one neutron transfer reaction ^{13}C $+ ^{197}$Au.

Nuclear Power Plant, Mate-Fin SRL
Cernavoda, Romania

RESEARCHER — *Apr 2015 - Sept 2018*

- Spectroscopic and statistical data analysis of β- and γ-irradiated waste products, and measurements for ^{3}H and ^{14}C levels.

Education

Leibniz University Hannover
Hannover, Germany

PH.D IN PHYSICS — *2022 - Now*

- Thesis - Hybrid Benchmarking of Quantum Algorithms

University of Bonn
Bonn, Germany

M.SC IN PHYSICS — *2018 - 2021*

- Thesis - Field Theories of Disordered $\mathbb{Z}_2$ Topological Insulators and Anomaly Inflow

University of Bucharest *Bucharest, Romania*

M.SC. IN THEORETICAL AND COMPUTATIONAL PHYSICS *2018 - 2021*

- Thesis - AdS/CFT Correspondence

University of Bucharest *Bucharest, Romania*

B.SC. IN ENGINEERING PHYSICS *2014 - 2018*

- Thesis - Spectroscopy study of the ^{198}Au nucleus with one neutron transfer reaction below the Coulomb barrier using ROSPHERE

University of Bucharest *Bucharest, Romania*

PSYCHO-PEDAGOGICAL TRAINING PROGRAMME LEVEL I *2014 - 2017*

- Accredited physics pre-university education teacher.

Further Education

McKinsey Academy *online*

MCKINSEY FORWARD PROGRAM *2024 - 2025*

- I attended courses on: Adaptability and Resilience, Problem Solving, Communicating for Impact, Navigating the Modern Digital Landscape Course

University of Hannover *Hannover, Germany*

PROMOTION PLUS+ QUALIFIZIERT, MANAGEMENT SKILLS *2023 - 2024*

- I attended courses on: Basics of Modern Project Management in Practice, Current Management Topics, Corporate Entrepreneurship – Management Methods for Corporate Management, Team Development and Team Leadership, Exploring Management Topics in a Playful Way Using the Method "Lego® Serious Play®" (LSP)

Articles and Preprints

03/2025	**Beyond asymptotic scaling: Comparing functional quantum linear solvers,** arXiv:2503.21420
03/2025	**A quantum search method for quadratic and multidimensional knapsack problems,** arXiv2503.22325, pending publication in IEEE Transactions on Quantum Engineering
09/2024	**A simple quantum algorithm to efficiently prepare sparse states,** PhysRevA.110.032609
11/2023	**Realistic Runtime Analysis for Quantum Simplex Computation,** arXiv:2311.09995
10/2023	**A quantum algorithm for the solution of the 0-1 Knapsack problem,** arXiv:2310.06623, pending publication in NPJ Quantum Information

Talks

06/2024	**Benchmarking Quantum Linear Solvers,** Leibniz University Hannover	*Hannover, Germany*
01/2024	**Maximum Flow Problem,** Leibniz University Hannover	*Hannover, Germany*
10/2023	**Realistic Runtime Analysis for Quantum Simplex Computation,** Leibniz University Hannover	*Hannover, Germany*
04/2023	**Graph Coloring Problem,** Leibniz University Hannover	*Hannover, Germany*
12/2022	**Quantum Computing for Industrial Problems,** University of Bucharest	*Bucharest, Romania*
11/2022	**Quantum Complexity Theory,** Leibniz University Hannover	*Hannover, Germany*
04/2022	**The HHL Algorithm,** Leibniz University Hannover	*Hannover, Germany*
07/2020	**Introduction to AdS/CFT Correspondence,** University of Bonn	*Bonn, Germany*
04/2019	**Mathematical Preliminaries for Topology in Physics,** University of Bonn	*Bonn, Germany*

Skills

Programming Languages	Python, C, Mathematica, Flutter/Dart
General	LaTeX, Ms Office, Procreate, Davinci Resolve, Canva, Wix website
Languages	English (proficient), German (advanced), Romanian (mother language), French (beginner)