Bianca-Mihaela Nemes

nbianca@seas.upenn.edu | 914-383-6570 | Philadelphia, PA

EDUCATION

University of Pennsylvania, School of Engineering and Applied Sciences Philadelphia, PA
Candidate for Bachelor of Engineering ***May 2028***
Major: Artificial Intelligence
Relevant Coursework: Data, Decisions & Models; Applied Dynamic Systems; Linear Algebra; Discrete Mathematics; Programming Languages; Neuroformal Proofs

International Computer High School of Bucharest, Mathematics & Computer Science, Bucharest, Romania
Honors & Awards: ***May 2024***

- Gold Award – International Research Project Olympiad, Indonesia
- Gold Award – Taiwan International Science Fair

PROFESSIONAL EXPERIENCE

Self-Initiated Project Bucharest, Romania
Project Lead & Inventor – Intelligent Wound Dressing **June 2021 – June 2024**

- Designed and developed a three-layered intelligent wound dressing to enhance healing for burn injuries, incorporating sensor data processing and predictive algorithms.
- Awarded 100,000 RON research grant by Romanian Ministry of Research; filed patent to protect IP.

National Physical Chemistry Institute of Bucharest Bucharest, Romania
Junior Researcher **May 2022 – April 2023**

- Conducted research on stochastic sensors for early cancer detection; applied statistical modeling techniques.
- Co-authored peer-reviewed article in Diagnostics Journal on using morphometry and computational mathematics to assess breast cancer metastasis risk.

TEACHING EXPERIENCE

University of Pennsylvania Philadelphia, PA
Teaching Assistant, Discrete Mathematics **Summer 2025 – Present**

- TA for undergraduate Discrete Mathematics course (Summer 25); subsequently TA for graduate-level course (Fall 2025).
- Led recitations and office hours covering logic, proofs, graph theory, and combinatorics – foundational topics for algorithm design and formal verification.
- Currently serve as Course Development Assistant for master-level Discrete Mathematics, contributing to curriculum design and problem set creation.

Research assistant, Human Computer Interaction Lab January 2026 – Present

- Working with PhD student Hita Kambhamettu on a paper exploring the AI Potemkin villages in LLM

LEADERSHIP & EXTRACURRICULARS

- Led student team through multi-year invention process, from ideation to research grant proposal and patent application.
- Auditing AI & Programming Languages classes; exploring interests in Lean theorem prover and automated theorem proving systems for formal verification of ML models.
- Represented Romania at international STEM forums, demonstrating leadership in technical and public communication.

SKILLS & INTERESTS

Technical: Python, Java, MATLAB; Machine Learning fundamentals; Data Structures & Algorithms
Languages: Romanian (native), English (advanced), French (intermediate)
Interests: Neuro-symbolic AI, Natural Language Processing, Automated Theorem Proving (Lean), Formal Verification, Machine Learning for Financial Applications