

MARIO-ALEXANDRU NICOLAE

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Education

Delft University of Technology

Bachelor of Science in Computer Science

Sep 2023 – Jun 2026

Delft, Netherlands

- Minor in Quantum Computing
- Relevant Coursework: Algorithms & Data Structures, Machine Learning, Computer Graphics, Object-Oriented Programming, Database Systems, Big Data Processing, Software Engineering

National College "Bogdan Petriceicu Hasdeu"

High School Diploma, Mathematics & Computer Science - Valedictorian (GPA: 9.99/10)

Sep 2019 – Jun 2023

Buzău, Romania

Projects

Forest Fire Prediction ML Competition | Python, scikit-learn, Pandas, XGBoost, CatBoost

Jan 2025

- 1st Place Winner among 150 participants in TU Delft ML Hackathon hosted by AI Dreamteam
- Built ensemble ML models to predict wildfire surface areas using weather, geographic, and temporal data
- Engineered features from multi-source datasets and optimized models achieving top performance on custom metric

Splitty - Full-Stack Expense Tracker | Java Spring Boot, JavaFX, SQL, REST APIs

Dec 2024

- Developed production-ready expense splitting application with real-time synchronization and email notifications
- Architected RESTful backend using Spring Boot with MySQL and responsive JavaFX frontend with multi-language support and intuitive UI for expense management
- Implemented automated testing suite and followed agile development practices with Git version control

AI Animal Classifier | Python, TensorFlow, Keras, Tkinter, NumPy

Nov 2024

- Trained CNN-based image classifier identifying 40+ animal species with 100% test accuracy on custom dataset
- Designed and implemented deep learning architecture with convolutional layers and data augmentation

Advanced Ray Tracing Renderer | C++, OpenGL, BVH Structures, CMake

Nov 2024

- Built high-performance ray tracer with BVH acceleration, recursive reflections/transparency, and environment mapping
- Implemented advanced lighting models including Phong shading, bloom effects, and tone mapping
- Optimized rendering pipeline achieving significant performance gains through spatial data structures

Technical Skills

Languages: Python, Java, C++, C, SQL, HTML/CSS, C#, PHP

Technologies/Frameworks: scikit-learn, Pandas, NumPy, TensorFlow, Keras, Spring Boot, JavaFX, React, Git

Tools & Platforms: Git, Jupyter, Docker, MySQL, PostgreSQL, REST APIs, CMake, LaTeX, Blender

Certifications

Machine Learning with Python | IBM (Coursera)

Jan 2026

Introduction to Artificial Intelligence (AI) | IBM (Coursera)

Oct 2025

Pre-University Physics (PUP01x) | DelftX (edX)

Sep 2025

Awards & Honors

Machine Learning Hackathon - 1st Place | AI Dreamteam, TU Delft

Jan 2025

Hack the Code 2025 - Top 30/1400 | Reply Challenges

Dec 2024

Romanian Baccalaureate Exam - Score: 10/10 | Informatics & Mathematics

Jun 2023

National Mathematics Olympiad - First Prize | Gazeta Matematică, County Phase

2021

Mathematical Olympiad - Second Prize | County Phase

2022

Languages

Romanian: Native | English: Full Professional (C1-C2) | German: Professional (B2) | French: Elementary (B1)