

# Mihnea-Gabriel Steiu

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## EDUCATION

**Brown University**, *B.Sc. Applied Mathematics & Computer Science*, 4.00/4.00 GPA Providence, RI | Class of 2027  
*Relevant Courses*: Software Engineering, Data Structures and Algorithms, Object-Oriented Programming, Statistics, Linear Algebra

## TECHNICAL EXPERIENCE

- University Medical Center Groningen**, *Software Developer Intern* Groningen, Netherlands | June 2024 - Present
- Training a **deep learning** model that uses surface imaging to predict the dosimetric impact of anatomical deformations of breast cancer patients during treatment. The algorithm decreases the number of imaging procedures by ~50%, leading to more adaptive workflows, less workload for doctors, and reduced patient radiation exposure.
  - Created a 10,000-size training dataset and used **Python** to generate augmented CT scans and process dose statistics and patient data.
- Brown University Department of Computer Science**, *Research Assistant* Providence, RI | Sept. 2023 – Jan. 2024
- Developed a visualization application for low-vision users which enables interaction with cosmic images through sonic and haptic feedback, in collaboration with NASA and the Smithsonian Astrophysical Observatory.
  - Explored image segmentation algorithms and implemented a multi-layer image display framework using **React** and **JavaScript**, allowing the integration of visual and X-ray data from the Chandra Observatory.
- University Medical Center Groningen**, *Software Developer Intern* Groningen, Netherlands | Apr. 2022 – Sept. 2022
- Created training data for a **deep learning** algorithm generating synthetic CT images from MRI scans, enabling real-time adaptive proton therapy for brain tumors. This reduced treatment planning time by ~30% and increased efficiency in proton dose calculation.
  - Programmed **Python** algorithms for automated **data processing** and metadata extraction for 50+ patients.
  - My algorithms were used for preprocessing of the SynthRAD2023 Grand Challenge [dataset](#).
- Technical University of Cluj-Napoca**, *Research Assistant* Cluj, Romania | May 2021 – Feb. 2022
- Developed model for automated diagnosis of ophthalmology patients using contrastive learning. Built an expert-system-powered case distribution algorithm that analyzes residents' performance to ensure personalized training across multiple retinal conditions.
  - Published research paper in the "Big Data and Artificial Intelligence-Driven Research in Ophthalmology" special issue of the Journal of Clinical Medicine.

## ACADEMIC PROJECTS

- Information Sharing History System**: Engineered a resource-constrained bulletin board system (BBS) in **Python**, simulating 1970s computing limitations. Designed and developed core BBS functionality including message posting, deletion, and searching, while optimizing file operations, query performance, and word frequency-based result prioritization.
- Othello**: Programmed a fully functional Othello game with AI capabilities using **Java** and **JavaFX**. Designed and integrated an intelligent computer player with variable difficulty levels, using the MiniMax algorithm.

## LEADERSHIP EXPERIENCE

- ABSO-Tech Robotics Team**, *Founder & Lead Programmer* Cluj, Romania | Sept. 2019 – June 2022
- Founded a high school robotics team and programmed the seventh-most efficient robot globally out of 7000 [teams](#), using **Java** and technologies such as **machine learning**, **computer vision (TensorFlow, OpenCV)**, and **control loops**.
  - Received 2nd Place at the 2022 Maryland Tech Invitational, after competing with the world's highest-ranked 39 best teams.
  - 3D-printed and donated 500+ face shields to frontline anti-COVID-19 workers around Romania.

## PUBLICATIONS

- European Society for Radiotherapy and Oncology 2023 Congress** May 2023  
[QA of deep learning-based synthetic CTs for adaptive proton therapy using uncertainty estimation](#)
- MDPI, Journal of Clinical Medicine** Feb. 2023  
[Artificial Intelligence for Personalised Ophthalmology Residency Training](#)
- Romanian Society for Physics** June 2021  
[IoT module for air pollution monitoring](#)

## SKILLS & INTERESTS

**Technical Skills**: Deep Learning, Java, Python, React, HTML, CSS, JavaScript, MATLAB  
**Languages**: Fluent in English (TOEFL iBT C1 certificate) and Romanian, elementary-level French (A2 DELF certificate) and German (A2)  
**Interests**: Playing the drums, basketball, reading, chess, martial arts