Mihnea-Gabriel Steiu

69 Brown Street, Box 7865 | Providence, RI 02912 | Phone: (401) 612-0311 | E-mail: mihnea-gabriel_steiu@brown.edu | LinkedIn

EDUCATION

Brown University, *B.Sc. Applied Mathematics & Computer Science*, 4.00/4.00 GPA — Providence, RI | Class of 2027
Relevant Courses: Introduction to Software Engineering, Program Design with Data Structures and Algorithms

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 will significantly decrease the number of imaging procedures, 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 developed 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
- Developed 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 a variety of 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: Developed 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 my school's 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
Language: Fluent in English (TOEFL iBT C1 certificate) and Romanian, elementary-level French (A2 DELF certificate) and German (A1)
Interests: Playing the drums, basketball, reading, chess, martial arts