Alexandru Jurju

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Education

Faculty of Automation and Computer Science, Technical University of Cluj-Napoca **2023 – Present**
Master in Artificial Intelligence and Computer Vision *Cluj-Napoca, Cluj*

- Relevant Coursework: Machine Learning, Computer Vision, Probability and Statistics, Natural Language Processing

Engineering Faculty, "Lucian Blaga" University of Sibiu **2019 – 2023**
Bachelor in Computer Science *Sibiu, Sibiu*

- Valedictorian, graduated at the top of my class.
- Relevant Coursework: Data Structures, Algorithm Analysis, Object Oriented Programming, Databases Design, Software Engineering

Experience

Private Tutor **2020 – 2023**
Self-Employed *Sibiu, Sibiu*

- Eagerly assisted fellow students in computer science courses, helping them grasp complex concepts.
- Demonstrated a deep understanding of programming languages, algorithms, data structures, and computer science principles, simplifying these topics for others.
- Expanded my own knowledge by finding innovative ways to explain concepts and adapt to different needs.
- Obtained communication skills and the ability to convey complex ideas in a clear and understandable manner.

Projects

Using artificial intelligence algorithms to learn the Snake game | *Python* **2022**

- Developed the game mechanics, including grid-based movement, collision detection, and food generation
- Created a fully connected feedforward neural network architecture from scratch without using any frameworks with customizable hidden layers to serve as the brain of the AI Snake player
- Implemented a genetic algorithm to evolve the neural network's weights and biases over generations, optimizing its performance and decision-making abilities.
- Created a Graphical User Interface for visualizing and testing the trained neural networks.
- Implemented features like real-time statistics, visualization of the neural network, saving and loading the obtained neural networks for testing and visualizing the improvements over multiple generations.

Implementing a Chess AI using Minimax Algorithm | *C#* **2021**

- Developed a fully functional chess game application employing the Minimax algorithm to create an AI opponent capable of strategic decision-making.
- Implemented the core mechanics of the game, including move generation, legal move validation, and capturing mechanics, adhering to the standard rules of chess.
- Developed an interactive GUI using C#'s Windows Forms framework to facilitate player interactions and provide a visually engaging chess experience.
- Designed an intelligent AI opponent using the Minimax algorithm with alpha-beta pruning, enabling the AI to make optimal moves by analyzing possible future moves and outcomes

Skills

Languages: Romanian (Native), English (Professional - C2), German (Elementary - A2)
Programming Languages: Python, Java, SQL(MySQL), C#
Tools: Git (GitHub/GitLab), Jira