# Stoica David Ioan

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## Summary

Final-year Computer Science undergraduate passionate about building robust software systems. Versatile developer proficient in C++ and Python, with hands-on experience in machine learning applications. Quick learner adept at solving complex technical challenges through clean, maintainable code and collaborative problem-solving.

## Education

**Transilvania University of Brașov** Oct. 2022 – Jul. 2025
Undergraduate Computer Science student

## Experience

- **Support Programmer** October 2023 - Present
  *Magic Lane, Brașov*
  - Designed and implemented neural networks for tasks such as street address normalization and language detection, using TensorFlow.
  - Processed and analyzed large datasets to train and evaluate machine learning models.
  - Improved a deep learning tool's architecture, data handling efficiency, and neural network export capabilities.
  - Developed a Python-based testing tool to ensure the reliability of the deep learning tool.
  - Containerized and deployed a standalone Python application using Docker and Jenkins for seamless server integration.
  - Gained proficiency in Python libraries such as Pandas, NumPy, and Scikit-learn.

- **Software Development Intern** June 2023 – September 2023
  *Magic Lane, Brașov*
  - Developed a Chess game in C++ with a GUI using Qt, applying clean code principles and design patterns.
  - Implemented unit testing using Google Test to ensure code reliability.
  - Studied and applied SOLID principles to improve software design and maintainability.
  - Explored machine learning basics and beginner statistics concepts using the python programming language.

## Projects

- **Gartic** | *C++, Qt* October 2023 – January 2024

  - Developed a multiplayer drawing game similar to Skribbl.io or Gartic using C++ and Qt.
  - Built a client-server architecture with support for multiple players and a centralized database using SQLite.
  - Created two client interfaces: a Qt-based GUI and a terminal-based client.
  - Managed communication between server and clients using *Crow* and *CPR*.
  - Secured user passwords with hashing algorithms using *picosha2*.

- **DataXPlain** | *Angular, Flask, Python, XAI* December 2024 – Present
  *Demo available at* **xai.stoica-david.me**
  - Developing a web application to help users analyze datasets and AI models using Explainable AI (XAI) techniques.
  - Built an Angular frontend and a Flask backend.
  - Enabled users to upload models (in a friendly .txt format) and datasets.
  - Integrated XAI methods (e.g., SHAP, LIME, Grad-CAM) to generate explanations for model predictions.
  - Implemented a fine-tuned chatbot for interactive discussions.
  - Deployed the application on a Linux server using Docker and GitHub Actions for CI/CD.

- **Tancodrom** | *C++, OpenGL* March 2024 – May 2024

  - Developed a 3D simulation of a tancodrome featuring tanks and helicopters capable of combat and environmental destruction.
  - Implemented realistic collisions, particle effects, dynamic lighting, shadows, and a day-night cycle.
  - Designed a cinematic animation and intuitive camera movement for enhanced user experience.
  - Utilized OpenGL for rendering and shaders for advanced visual effects.
  - Managed dependencies using *vcpkg* and built the project with *CMake*.

## Events

- **Mention**, Student Scientific Communication Session 2024
  Transilvania University, Brașov

- **3rd Place**, XGEN 2024 Hackathon: Detecting Fake News 2024
  *Technical University of Cluj-Napoca, Baia Mare*

## Technologies

**Languages:** Python, C++, C#, TypeScript, SQL, HTML/CSS.

**Frameworks:** Qt, TensorFlow, Angular, WPF, PyTorch.

**Developer Tools:** Git, Visual Studio Code, PyCharm, Visual Studio, Visual Paradigm, Docker, GitHub Actions.