

# Matei-Cosmin Drăgușin

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## Education

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**Polytechnic University of Bucharest**  
Faculty of Automatic Control and Computer Science, BS in Computer Science

**Oct 2022 – June 2026**  
Bucharest, Romania

## Projects

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### BitTorrent Protocol Implementation (*C, MPI, Pthreads*)

- Implemented a distributed BitTorrent-like protocol using **MPI** and **Pthreads** for efficient peer-to-peer file sharing
- Developed a multi-threaded architecture with separate download and upload threads to maximize transfer speeds
- Created a tracker system to coordinate swarm management and peer discovery across the network

### Game Development Projects (*C++, OpenGL*)

- Developed **Drone Delivery Game** (3D) with **C++** and **OpenGL** featuring procedural terrain generation and physics-based gameplay
- Created **Tank Wars** (2D) battle game also using **C++** and **OpenGL** with terrain destruction and physics-based projectiles
- Implemented collision detection systems, camera controls, and particle effects for enhanced gameplay experience

### IMDB System Management (*Java, OOP, Design Patterns*)

- Implemented a complete management system for a platform similar to IMDB using **Java** and **object-oriented principles**
- Applied multiple **design patterns** including **Singleton**, **Factory**, **Strategy**, and **Observer** for robust architecture
- Created flexible data models using **inheritance**, **polymorphism**, and **generics** for managing movies, TV series, and actors

### Insurance Taxonomy Classifier (*Python, NLP, Machine Learning*)

- Developed an ensemble classification system that accurately matches companies to insurance taxonomy labels using TF-IDF, WordNet similarity, and domain-specific keyword matching
- Implemented data preprocessing pipelines and feature engineering techniques for optimizing text similarity in the insurance domain
- Created a scalable solution with batch processing and LRU caching optimizations capable of handling large datasets efficiently

## Technical Skills

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**Languages:** C/C++ (Systems programming, Game development), **Java** (OOP, Design patterns), **SQL** (Database management), **Rust** (Systems programming), **Python** (Machine Learnings)

**Technologies & Tools:** Git, MPI, Pthreads, TCP/IP Stack, OpenGL, Relational Databases, Network Protocols

**Concepts:** Data Structures, Object-Oriented Programming, Design Patterns, Algorithms, Database Design, Distributed Systems, Multithreading, Network Architecture, Graphics Programming