

# BUTACU IONEL-CATALIN

[linkedin.com/in/catalin-butacu](https://www.linkedin.com/in/catalin-butacu) • [github.com/CatalinButacu](https://github.com/CatalinButacu) • [butacu.catalin@yahoo.com](mailto:butacu.catalin@yahoo.com) • 0753 320 964

## PROFESSIONAL SUMMARY

C++ Software Engineer (3+ years) with a computer engineering background, now focused on the intersection of software and AI. I combine analytical rigor with a collaborative spirit, honed through extensive volunteer work, to drive innovation. Currently advancing my AI expertise and certified in leading cloud technologies.

## WORK EXPERIENCE

### Gemini CAD Systems

Junior Software Engineer

Iași, RO

June 2023 - Present

- Contributed to the architecture and optimization of a real-time CAD rendering pipeline, enhancing 2D canvas performance for large-scale design workflows.
- Collaborated on implementing a robust, MVC-based permission system using Qt, defining granular user access controls with guidance from senior engineers.
- Developed and enhanced cross-platform desktop features in C++ and Qt, including custom UI components and event filtering systems, within a collaborative team environment.
- Assisted in optimizing legacy codebase by applying multithreading and memory management, contributing to the resolution of critical bugs in core application services.
- Integrated key Qt modules to enable features like HTML report generation and secure cloud data synchronization, working closely with the team to ensure seamless implementation.

Software Engineer Intern

August 2022 - May 2023

- Delivered pixel-perfect UI enhancements and responsive design updates using Qt and QML, ensuring cross-platform consistency under the guidance of senior developers.
- Developed scalable UI components using Qt's Model-View architecture, implementing data binding for real-time visualization with guidance from the team.
- Actively participated in an enterprise-level Scrum team, contributing to code reviews, sprint planning, and agile ceremonies while navigating a large-scale C++ codebase.

### Special Telecommunications Service (STS)

IT Support Staff (Local Election)

Botosani, RO

August 2020 - September 2020

- Provided technical support for critical electoral IT systems (SIMPV/SICPV) and implemented cybersecurity measures during national election processes.
- Delivered training and technical assistance for electoral personnel while maintaining 24/7 system availability and equipment functionality.

## EDUCATION

### Gheorghe Asachi Technical University of Iași

Master of Science in Artificial Intelligence

Iași, RO

October 2024 - June 2026

*Courses: Fundamentals of Machine Learning, Deep Learning, Natural Language Processing, Big Data Techniques, Cloud Computing, Reinforcement Learning, Multiagent Systems, Edge Computing Applications*

Bachelor of Science in Automatic Control and Applied Informatics

October 2020 - June 2024

*Courses: Computer Programming, Data Structures & Algorithms, Database Systems, Real-Time Programming, Systems Theory, Microprocessor-Based Systems, Embedded System, Control Engineering, Computer Networks, Neural Networks & Fuzzy Logic, Knowledge-Based Systems*

## CERTIFICATES

- Oracle Cloud Infrastructure 2025 Data Science Professional (1Z0-1110-25)
- Oracle Cloud Infrastructure 2025 Generative AI Professional (1Z0-1127-25)
- Oracle Cloud Infrastructure 2025 AI Vector Search Professional (1Z0-184-25)
- Oracle Cloud Infrastructure 2025 AI Foundations Associate (1Z0-1122-25)

## PROJECTS

### Metaheuristic Optimization Framework

2025

Co-developed a Python framework with multiple optimization algorithms. I implemented specific solvers, analyzed their benchmark performance on high-dimensional functions, and identified the most robust and efficient solutions.

## VOLUNTEER & LEADERSHIP

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### LOCAL BEST GROUP IASI

Iasi, RO

IT Department Coordinator

September 2023 - August 2024

- Directed the IT department, ensuring the reliability and efficiency of all technical and logistical operations, and supporting organizational goals and needs.
- Mentored and supervised a team of IT volunteers, providing technical guidance and fostering collaborative project execution.
- Managed IT resources, including hardware, software, and network assets, to support organizational goals and needs.

Coordinator of JobShop® Career Event (23rd Edition)

November 2022 - April 2023

- Spearheaded the planning and execution of the JobShop® Career Event, connecting students with leading industry employers.
- Managed all event logistics, including venue coordination, vendor management, scheduling, and budget oversight.
- Developed and implemented event strategies to maximize attendee engagement and partner satisfaction.
- Liaised with company representatives, university staff, and student volunteers to ensure seamless event flow.

TOPICS Responsible — Prove It 24H Techathon (2nd Edition)

December 2021 - March 2022

- Collaborated closely with university departments, external stakeholders, and the core-team to define event scope and objectives.
- Facilitated the entire participant experience, from establishing regulations to providing all necessary hackathon materials and resources.
- Managed communication channels between organizers, mentors, and participants throughout the 24-hour event.

IT Responsible — BEST Training Weekend

January 2021 - May 2022

- Built and maintained the event website using HTML5, CSS3 (Flexbox/Grid), and ES6 JavaScript
- Partnered with design and marketing via Git/GitHub (branching, PRs) to iterate quickly; diagnosed and resolved UI/JS issues during event operations, contributing to on-time releases and a smooth participant experience.

## SPECIALTIES

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**Desktop Development** Qt Framework (5.8-6.8), C++17/20, Cross-Platform Applications, Real-Time Systems

**Qt Technologies** Qt Widgets, QML, Signal/Slot, Model-View Architecture, Custom Delegates, Proxy Models

**Performance Optimization** Multithreading, Memory Management, Legacy Code Refactoring, Profiling

**Development Practices** Agile/Scrum, Code Reviews, Version Control (Git), CI/CD, Unit Testing

## OTHER SKILLS

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**Languages** Python, Matlab, Rust, Java, JavaScript

**AI/ML Frameworks** PyTorch, Scikit-Learn, TensorFlow, Hadoop, Big Data Processing

**Tools & Platforms** Docker, SonarQube, Jupyter/Colab, Anaconda, Wandb, Cloud Services

**Soft Skills** Technical Leadership, Problem Solving, Cross-Functional Collaboration, Mentoring