THEODOR-PIERRE MOROIANU

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% https://moroianu.work ● London, UK

WORK EXPERIENCE

Quantitative Developer
Quadrature Capital

📅 Jan 2025 - present ● London, UK

Quantitative developer in the market data team.

Committee Member, MateInfoUB Admission Contest
University of Bucharest

📅 June 2022 - present ● Bucharest, Romania

Key member of the scientific and organization committee of MateInfoUB, a yearly recurring admission contest organized by the University of Bucharest.

Teaching Assistant
ETH Zürich

📅 Sept 2023 – Dec 2023 ● Zürich, Switzerland

Teaching assistant for the Algorithms Lab and Network Security core courses, due to my outstanding results in previous iterations. My role involved preparing and holding weekly exercise sessions as well as the evaluation of students' progress.

Quantitative Developer Intern
Quadrature Capital

📅 July 2023 – Sept 2023 ● London, UK

Added Rust support to the internal market data pipeline, and implemented a full-stack real-time order book explorer using Rust , Web Assembly , HTML/CSS and React .

Software Engineer Intern
Jane Street Capital

📅 July 2022 – Sept 2022 ● London, UK

Implemented a customizable, log-based alert system listening for errors during the processing pipeline of corporate actions, in OCaml .

Software Engineer Intern
Citadel LLC

📅 June 2021 – Aug 2021 ● London, UK

Implemented a full-stack application displaying breaks occurring during the automated post-trading reconciliation process, using Typescript , React and GraphQL .

Software Engineer Intern
Google LLC

📅 July 2020 – Sept 2020 ● Zürich, Switzerland

Implemented the OOXML (Microsoft Office format) parser for an internal tool used in the analysis of malicious documents sent over Google services, using C++ .

EDUCATION

Master of Science
ETH Zürich

📅 Sept 2022 – Dec 2024

- Joint degree with EPF Lausanne (EPFL).
- Major in *Cyber Security* and minor in *Data Management Systems*.
- Recipient of the *Excellence Scholarship & Opportunity Programme*, awarded to 5 people across the entire CS department.
- Graduated *summa cum laude*.

Bachelor of Computer Science
University Of Bucharest

📅 Oct 2019 – June 2022

- Valedictorian of the CS department, with a perfect 10.0 out of 10.0 GPA.
- Part of the *Excellence Student Programme*, with more in-depth courses.

SKILLS

Broad Programming Knowledge

Proficient in developing performance-critical and low-latency software, with experience with database design, networking, backend and frontend web development, data engineering, GNU/Linux, and domain-specific knowledge in finance.

Rapid Prototyping

Experience with quickly creating Proofs of Concepts for implementing features or exploring new ideas using diverse tech stacks.

Learner & Educator

Able to rapidly adapt to new mediums, technologies, and frameworks, with the ability to share acquired knowledge with others.

Project Ownership and Multitasking

Able to manage and take ownership of multiple projects concurrently, enhancing overall team efficiency.

C/C++ Python Rust JS/TS
HTML/CSS SQL React Flask Linux
Docker/Podman Networking

Machine Learning Research Intern
Bitdefender

📅 July 2018 – Aug 2018   📍 Bucharest, Romania

Five week internship in the ML department, where I developed a program displaying the saliency maps of various neural networks using `PyTorch` .

Competitive Programming Teacher
Bucharest Ultraperformance in Informatics Center

📅 Oct 2019 – June 2022   📍 Bucharest, Romania

Teacher of `algorithms` and `C++` courses (3h / week) for high-school students engaged in national and international competitive programming competitions.

AWARDS

🥈 Silver Medal – ICPC World Finals

📅 Oct 2021   📍 Moscow, Russia

My team of three won a Silver Medal (8th place) at the International Collegiate Programming Contest World Finals, representing the University of Bucharest.

🏆 First Place – ICPC Regional Contests

📅 2019, 2024   📍 Romania, France

Ranked 1st in the South-Eastern, respectively the South-Western European regional ICPC contests, representing the University of Bucharest and ETH Zürich.

🏅 Finalist – ICPC World Finals

📅 2021, 2023, 2024   📍 Russia, Egypt, Kazakhstan

One of the few competitive programmers to qualify to three ICPC World finals, representing ETH Zürich and the University of Bucharest in Moscow, Luxor and Astana. Won a silver medal and a *Highest Honors* distinction.

🥈 Silver Medal – International Olympiad in Informatics

📅 August 2019   📍 Baku, Azerbaijan

Silver medal at the IOI, the most prestigious Computer Science contest for high-school students.

🥇 Gold Medal – Central European Olympiad in Informatics

📅 July 2019   📍 Bratislava, Slovakia

4th place at the Central-European high-school Computer Science Olympiad.

🥇 Gold Medal – Balkan Olympiad in Informatics

📅 August 2018   📍 Timișoara, Romania

2nd place at the Balkan Computer Science Olympiad.

🏆 First Place – Romanian National Informatics Olympiad

📅 2018 and 2019   📍 Constanța and Suceava, Romania

Twice in a row winner of the Romanian National Olympiad in Informatics, during my last 2 years of high-school.

🥉 Third Place – InsomniaHack

📅 March 2023   📍 Lausanne, Switzerland

Third place on the academic leaderboard of the largest Swiss CTF contest, representing EPFL (the Federal University of Lausanne).

PUBLICATIONS

Jacob, R., **et al.,** *"Fantastic Joules and Where to Find Them. Modeling and Optimizing Router Energy Demand.",* **ACM IMC 2025**.

Dumitran, M., **Moroianu, T.,** and Alexe, V., *"From Struggle to Mastery: LLMs Conquer Advanced Algorithm Exams, and Pave the Way for Editorial Generation.",* **ITS 2025**.

Dumitran, M., **Moroianu, T.,** and Bucă, M., *MateInfoUB: A Real-World Benchmark for Testing LLMs in Competitive, Multilingual, and Multimodal Educational Tasks,* **BEA 2025**.

PORTOFOLIO

MateInfoUB Admission Contest
github.com/MateInfo-UB

I created an online platform and repository containing tasks (statements, sources, tests and solutions) I wrote for the *MateInfoUB* university admission contest, as a member of the organizational committee.

ReplBug – DBMS Bug Replication Tool
github.com/theodormoroianu/ReplBug

Wrote a CLI tool used for automatically replicating DBMS bugs and starting custom DBMS servers. The tool is addressed to DBMS researchers, and is built using `Python` and `Podman` .

SmartForms – AI-Powered Form Parser
github.com/TeamUnibuc/SmartForms

Wrote an app exposing an `API` allowing users to create custom forms and questionnaires. The app is then able to digitize scans of filled questionnaires into an *Excel*-compatible format, using `Computer Vision` .

SSChat – CLI Chat App
github.com/Unibuc4Ever/SScHat

Wrote a userspace library in `C` for channel-based inter-process communication, using unix `FIFO` pipes. To then showcase the library, built an app exposing a CLI interface allowing users to enter chat rooms and send/receive messages.

LANGUAGES

🇫🇷 **French** – Native

🇷🇴 **Romanian** – Native

🇬🇧 **English** – Fluent (C2)

🇩🇪 **German** – Beginner