

DAN MITREA

EDUCATION

Cluj Napoca, Romania

Technical University Cluj Napoca

September 2021 - Present

- **PhD theme:** *Local Decentralized Energy Markets and Energy Communities. Currently in my second year of study. **Study themes:** Blockchain privacy, Multi-asset NFTs, Energy Markets*
- **Certificate:** Masters Degree in Computer Science - *Software Engineering*
- Masters Thesis : *A blockchain based energy flexibility market*
- Bachelor Thesis : *Matching Algorithms for energy trade settlement in a distributed ledger energy marketplace - A second-tier solution*

EMPLOYMENT

Software Developer

Distributed Systems Research Laboratory,
Technical University Cluj Napoca

April 2018 - Present

- Working on international projects regarding energy efficiency in Data Centers and processing data from smart sensors in distributed, scalable architectures
- Developed a sensor monitoring system, saving data from in-house devices onto a MongoDB NoSQL database. The application computes a tamper proof mechanism for storing hourly monitored values on blockchain and verifying that they are not altered
- Responsible for developing and implementing the blockchain and sensor monitoring part of BRIGHT, a project which received funding from the European Union Horizon 2020 research and innovation programme - <https://www.brightproject.eu/>
- Deployed multiple projects in Docker environment
- Implemented user interfaces in Angular and React for periodical reviews of the research projects
- Implemented smart contracts in Solidity, which compute complex logic required for an energy marketplace: order registration and matching, commitment and incentivized settlement.
- Leveraged knowledge: worked with Git, backend development in Java (Spring boot) and NodeJS, RESTful endpoints, user interfaces in Angular 6 and React, microservice architectures, Python, Web3 framework for interacting with Ethereum network, Solidity, MQTT, SQLite, JWT, Docker containers, working with information from smart sensors stored in MongoDB database, Zero-Knowledge Proof, Linux operating system

Software Developer, Intern

Montran SRL

July - August

2017

- Developed an enterprise web application for a GPS - Global Payment System
- Studied the integration of MongoDB into the project and tested some operations on a large scale database to see the improvements over a traditional database, PostgreSQL
- Leveraged knowledge: working in teams with Git, Java (Spring boot), JSP, layered architecture, HTML, CSS, JQuery, Ajax calls, MongoDB with Spring Boot

Freelancing/ Others:

- **Research Assistant at UTCN (2019 - Present)** - Teaching laboratories at Technical University of Cluj-Napoca. Teaching subjects:
 - Distributed Systems: fourth year of university
 - Programming Techniques: second year of university
- **Insurance agent at NN Group Romania (September 2017 - February 2018):** I have worked as an insurance agent, calling people and arranging meetings, with individuals or groups of employees, in order to present the products and point out their importance

- **In2itive, Intern (September - October 2015)** : A three week internship where I learned the basics of HTML, CSS and PHP and created responsive web pages using bootstrap.

SOFTWARE PROJECTS

- **Social Platform for contracting services from individuals:**

- Integrated advanced features such as chat, individual component loading and interactive features
- We worked in a team, and as a team leader, I successfully uploaded all project assignments in time and made sure to integrate the work of each colleague together
- We also made the website available for Android devices
- Utilized: HTML, CSS, JavaScript, JQuery, Ajax calls, Android native

- **Gesture controlled mouse:**

- Developed a C++ application that allowed the user to move the mouse and click using hand movement and gestures(closed - open fist)
- Integrated the OpenCV library and made the project to be efficient and to have a fast response
- Utilized: C++, OpenCV, YCbCr color model, Convex hulls, Center of contours

Skills

- **Software:** (*proficient*) Java, (*proficient*) NodeJS, ReactJS, Typescript, Solidity, Git, C++, OOP, Linux, MacOS, Windows (*familiar*) VHDL, SQL, HTML/CSS, JavaScript, Android, Python
- **Research:** https://scholar.google.com/citations?user=j_JyUBoAAAAJ&hl=ro&oi=ao
- **Languages:**
- English - CAE (Certificate in Advanced English): C1 Level
- French - basic understanding and reading skills

Hobbies

- All kinds of sports, including basketball, tennis, football, swimming etc. I am currently practicing MMA and fitness/bodybuilding.
- Crypto/Stocks Trading

