ÁRON KATONA

Engineering student with passion to technology

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EDUCATION

B.Sc. in Computer Science

Technical University of Cluj-Napoca

October 2018 – July 2022

- CGPA: 9.68/10 - *Academic Performance Scholarship recipient*
- Main subjects:

Data Structures and Algorithms | OOP | Operating Systems | Mathematical Analysis I and II | Linear Algebra | Microprocessors | Computer Architecture | Image Processing | Computer Graphics | Artificial Intelligence | Computer Networks | Databases

WORK EXPERIENCE

Software Engineer

Cloudflight Romania

July 2021 - August 2021 Cluj-Napoca

- Fullstack application, running on an embedded device.
- Created 3 new features, solved 10 issues, and worked on changing the control flow.
- Participated in code reviews, agile ceremonies and pair programming.
- Created a Python CLI program for handling OS and HW related functionalities.
- Participated in teamwork trainings.

Java | Micronaut | VueJs | Python | Linux

Android Developer Intern

Garmin

July 2020 - October 2020 Cluj-Napoca

- Studied Android development in **Kotlin** by creating small learning apps
  - lifecycle, navigation, MVVM architecture, Retrofit, Room DB
- Studied the changes in **Android 11** and their effects on the **Active-Captain** app.
- Solved 15 issues and created small features.

Android | Kotlin | Git | Gerrit | Jira

COURSES

C and Win32 programming course

Bitdefender

October 2018 - April 2019 Cluj-Napoca

- I was among the five prizewinners.

CERTIFICATES

Oracle Certified Professional: Java SE 11 Developer

PROJECTS

Webshop

- Proof-of-concept project for creating **RESTful web-services** and applying HATEOAS
- Transformation into a **distributed system**
  - Microservices in separate **containers**
  - Communication via **multi-party session types**.

Scala | Spring Boot | Docker compose | REST | HATEOAS | Session types | Distributed back-end

3D Chessboard and Piece recognition

- Detects a real chessboard on digital image, classifies each piece, visualizes the state of the board in a standard 2D format.
- Worked in a team of two.

OpenCV | Tensorflow | C++ | Image Processing

Irrigation station

- *A moisture level based plant irigation station with integrated webserver*
- REST API through which the clients can configure the application parameters

C++ | Arduino | ESP8266 | REST

Tatooine

- Presentation of a Star Wars inspired 3D scene using OpenGL
- Lightning, shadows, object and camera animation

OpenGL | Computer Graphics | C++

Translator from propositional logic to Boolean ring arithmetic

- Builds a parse tree and replaces the operators based on the rules described in the article with DOI: 10.1080/07468342.2020.1698931

Python | SymPy | Logic

CONTESTS

- **ACM SEERC 2020:** participant
- **Google Hash code 2020:** My team was ranked in the top 5% (out of 1000+ teams)
- **Olympiad in Informatics 2018:** 2nd place at county level. Represented my county at the national level.

SOFT SKILLS

Leadership and organization skills:

- I am one of the leaders of my scout team. Every year we plan and coordinate a **scout camp**, having around *70 participants*.
- Completed a national **scout training** focusing on leadership, management and teaching.

Teaching skills:

- For 7 years I've been teaching a **group of scouts** regularly, by applying the "learn by doing" principle. They are now 13-15 years old.
- In 2021 I was a teacher in a **computer science group** in my high school, where we had weekly lessons about algorithms, programming and technology.
- Completed the **first pedagogy module**.

Communication skills:

Volunteered at the *Festival of Young Artists Bayreuth* (Germany) in August 2018. I assisted in the logistics of the event by which I had the possibility to *work in a team* with other volunteers from *all part of the world*.

Language skills:

Hungarian, Romanian, German (A2/B1, DSD), English (C1, LCCI)

SKILLS

- Good **mathematical background**.
- Good **problem solving** and **deduction** skills.
- Skills in **software engineering** gained by working on personal and work related projects.
- Skills in designing **digital systems** and **systems with microprocessors** gained through personal and university projects.
- Understand the fundamentals of **physics** and **electronic circuits**.

INTERESTS

My greatest passion is **engineering**

- To **create efficient and quality products**
  - Efficient algorithms
  - Applying design principles and patterns
  - Applying mathematics, physics and computer science theory to ensure correctness and efficiency.
- To **solve (real life) problems** by *understanding* the process behind them.
- Passionate about **functional programming** and **software architectures**.
- Interested in **IOT** and **home automation**.

I'm also passionate about **(new) technology**

- I like to **try them out**: self hosting apps, learning programming languages
- Participate regularly in **workshops**: GDG Cluj-Napoca, Tech events in Cluj-Napoca

I like to **solve puzzles and challenges**

- Playing **Chess and Sudoku**
- Solving **algorithmic** problems:
  - I participate regularly in coding competitions: e.g. Hash code, Code jam, Cloudflight Coding Contest

TECNHOLOGY

Languages and frameworks

Java, Kotlin, C, C++	●●●●●
Spring Boot, SQL, Angular, Android, Python	●●●●○
Scala, VHDL, Elm, Haskell	●●●○○

Tools

Linux	●●●●●
Docker, Maven, Gitlab-CI	●●●○○