ÁRON KATONA

Engineering student with passion to technology

@ katonaaron01@gmail.com Cluj-Napoca, RO github.com/katonaaron

EDUCATION

B.Sc. in Computer Science

Technical University of Cluj-Napoca

October 2018 – July 2022

- CGPA: 9.62/10 - *Academic Performance Scholarship recipient*
- Software
  - Data Structures and Algorithms (10)
  - Operating Systems (10)
  - OOP (10)
  - Databases (10)
  - Computer Graphics (10)
  - Functional Programming (10)
  - Artificial Intelligence (10)
- Mathematics
  - Mathematical Analysis I and II
  - Linear Algebra
  - Statistics and Graph theory
  - Numerical Methods (10)
- Hardware
  - Digital System Design
  - Analog and Digital Circuits (10)
  - Computer Architecture (10)
  - Design with Microprocessors (10)

WORK EXPERIENCE

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.
  - Presented the issues to the team
- Solved 15 issues and created small features.
  - Established a communication between the UI and a background service by using Broadcast, LiveData and Intents.

Android | Kotlin | Gradle | Git | Gerrit | Jira

COURSES

Developing Android Apps with Kotlin

Udacity, Google

July 2020 Online

Java course

Google Digital Workshop

March 2019 - May 2019 Cluj-Napoca

C and Win32 programming course

Bitdefender

October 2018 - April 2019 Cluj-Napoca

- I was among the five prizewinners.

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

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

Fast food webshop

- Menu and checkout pages of a restaurant.
- Demo project for learning Angular.

REST | Java | Spring Data | Angular

COMPETITIONS

- **Cloudflight Coding Contest 2020:** My team reached the last level.
- **Google Hash code 2020:** My team was ranked in the top 5% (out of 1000+ teams)
- **Catalysts School Coding Contest 2018** My team won the 5th place.
- **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 *100 participants*.
- Completed a national **scout training** focusing on leadership and teaching.

Teaching skills:

- For 7 years I've been meeting with a **group of scouts** regularly, and teach them by applying the "learn by doing" principle. They are now 12-14 years old.
- Founding member of a **computer science group** in my high school where we teach the pupils regularly about algorithms, programming and technology.
- Enrolled in the **pedagogy module** of the university.

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 design** gained by applying the design principles to develop projects.
- Good understanding of **functional programming**
- Understanding of **logical agents** and **planning** with PDDL.
- Skills in designing **digital systems** and **systems with microprocessors** gained through personal and university projects.
- Understand the fundamentals of **physics** and **electronic circuits**.
- Acquired skills in **unit testing** through the projects I made.

INTERESTS

My greatest passion is **engineering**

- To **create efficient and quality products**
  - Efficient algorithms
  - Designing SOLID software, writing clean code
  - Applying design principles and patterns
  - Applying mathematics and computer science theory to ensure correctness and efficiency.
- To **solve (real life) problems** by *understanding* the process behind them.
  - Studying computer science, engineering and physics helps to *deepen my understanding*.
- Interested in **functional programming**.
- 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 **math and logic** problems
- Solving **algorithmic** problems:
  - I participate regularly in coding competitions: e.g. Hash code, Code jam, Cloudflight Coding Contest

TECNHOLOGY

Languages and frameworks

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

Tools

Linux	●●●●●
Maven, Docker, LaTeX	●●●○○