

# Alexandru Ariton

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## ACHIEVEMENTS

**INNOVATION LABS** | FINALIST

Bucharest, RO | March 2023

**APPLE SWIFT STUDENT CHALLENGE** | WINNER

Apple (online) | June 2021 and June 2022

**SEEMOUS** | SILVER MEDAL

Struga, NMK | March 2023

**HACKITALL 1 BY BCR** | 5TH PLACE

Bucharest, RO | Winter 2023

**ROMANIAN NATIONAL MATH OLYMPIAD** | 5TH PLACE, GOLD

Deva, RO | 2019

## EXPERIENCE

**SOFTWARE INTERNSHIP AT CENTER FOR QUANTUM NETWORKS** |

COLLABORATION BETWEEN MIT AND UMASS AMHERST AND UNIVERSITY OF ARIZONA

Summer 2023 | Julia SoC

Contributed to the QuantumSavoury.jl library, and wrote julia notebooks

- Implemented double selection purification circuits and testing
- Implemented simple selection purification circuits and testing
- Proved by code the improvement in performance given by the double selection purification circuit
- Implemented EXPEDIENT and STRINGENT protocols
- Wrote a julia notebook about the differences between double and single selection purification.

## PROJECTS

**TESSERACT 4D** 

METALKIT, SWIFT, OBJECTIVE C, C++

Used **ray-marching** in **MetalKit** directly on the GPU to build a software that plots sections of 4D objects passing through 3D space. Won the **Apple Swift Student Challenge 2023** with this app.

**VECTOR PHASE PLOTTER** 

SPRITEKIT, SWIFT

Built an app that plots **3D vector spaces**.

This app was used in a **Chaos Theory** lecture for visualising and modeling **3D Lorenz attractors**.

**NOTE TAKER** 

SWIFTUI, SWIFT, METALKIT, OBJECTIVE C, C

A note taking equipped with mathematical equation interpretation and graphing using **MetalKit**, and also a complex undo/redo system.

## EDUCATION

**Bachelor of computer science and engineering**

Computer science and Engineering (CTI) | 2022 - present

POLITEHNICA BUCHAREST

Relevant Courses: Numerical Methods, Programming with Assembly, Advanced Algebra and Mathematical Analysis.

## SKILLS

**Languages:** Swift, C, Objective C, C++, Julia

**Web Development:** SvelteKit, JavaScript, React

**Technologies:** MetalKit, AppKit, UIKit, QuantumSavoury.jl