Radoica Draškić

MSc student in Applied Physics at TU Delft

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Experience

Quantum Algorithms Intern
Quantum Machines
Jun. 2021 – Present | Tel Aviv, Israel (remote)

- Part of the Libraries team.

Julia | Python | QUA

Student Assistant
Quantum Inspire, QuTech
May 2021 – Present | Delft, Netherlands

- Assisting in the maintenance and improvement of Quantum Inspire, a cloud-based quantum computing service.
- Simulating and benchmarking spin qubits.

Qiskit | cQASM

Teaching Assistant
TU Delft
Nov. 2019 – Jan. 2021 | Delft, Netherlands

- Fundamentals of Quantum Information (AP3421)
- Advanced Statistical Mechanics (AP3021)
- Advanced Electrodynamics (AP3071)

BSc courses:

- Introduction to Quantum Computer Science (CSE3130)
- Solid State Physics (TN2844)
- Statistical Physics (TN2624)

Teaching Assistant
Faculty of Computing, Union University
Oct. 2018 – Jun. 2019 | Belgrade, Serbia

- Cryptography
- Design and Analysis of Algorithms

Software Engineer Intern
Microsoft Development Center Serbia
Aug. 2018 – Oct. 2018 | Belgrade, Serbia

- Part of the Havok Physics Engine team.
- Implemented Cloth Self Collision from `this paper`.

C++ | Game Mechanics

Hardware-Software Engineer Intern
Maxeler Technologies
Apr. 2018 – Jun. 2018 | Belgrade, Serbia

- Worked on `MaxCompiler` and developed an application for analytics of compilation data.

Java | Python

Education

MSc in Applied Physics
Faculty of Applied Sciences, TU Delft
Sept. 2019 – Aug. 2021 | Delft, Netherlands

- Physics for Quantum Devices and Quantum Computing
- Casimir pre-PhD Programme
- Honours Programme

BSc in Theoretical and Experimental Physics
Faculty of Physics, University of Belgrade
Oct. 2015 – Jul. 2019 | Belgrade, Serbia

BSc in Computer Science
Faculty of Computing, Union University
Oct. 2015 – Aug. 2019 | Belgrade, Serbia

Honours & Awards

TU Delft Excellence Scholarship 2019-2021
Scholarship for MSc studies at TU Delft covering tuition fees and part of the living expenses, €25,000 per year.

Holland Scholarship 2019-2021
Scholarship for MSc studies at TU Delft contributing to living expenses, €5,000.

PLANCKS 2019 - 2nd place
International competition in theoretical physics for teams of bachelor's and master's students.

BAPC 2019 - 17th place
Benelux Algorithm Programming Contest

ACM ICPC Regionals - participation
SEERC 2016, 2017, 2018; NWERC 2019

IPhO 2015 - Honourable mention
International Physics Olympiad, Mumbai, India

National Mathematics Competition
1st place 2015, 2014, 2013; 2nd place 2012

Test Scores

- Physics GRE: 990/990 (94%), Apr. 2018
- GRE General: QR: 170/170 (96%) VR: 155/170 (69%) AW: 4.0/6.0 (59%), Oct. 2018
- TOEFL iBT: 108 (R: 29 L: 29 S: 25 W: 25) Dec. 2018

School Projects

Quantum State Learning and Variational Quantum Eigensolver

Jul. 2020 – Sep. 2020 Leiden, Netherlands

- Short research project as part of a Casimir pre-PhD programme with Prof. Vedran Dunjko at Leiden University.
- Inspired by *The Learnability of Quantum States*, Aaronson, (2007), we explore the scenario of learning the ground states of known Hamiltonians using parameterized quantum circuits.

Python Cirq OpenFermion

Topology of a Cooper Pair Transistor

Oct. 2020 – Apr. 2021 Delft, Netherlands

- Master thesis research project with Prof. Anton Akhmerov (TU Delft) and Dr. Valla Fatemi (Yale).
- Exploring topological superconducting circuits, their applications and experimental realization, inspired by *Weyl Josephson Circuits*, Fatemi *et al.*, (2020), more specifically, a circuit that behaves as a current switch.

Python Kwant

Quantum Computing with Edge Modes

Apr. 2021 – Jun. 2021 Delft, Netherlands

- Short research project as part of a Casimir pre-PhD programme with Prof. Eliška Greplová.
- Exploring the implementation of quantum gates on the quantum spin Hall chiral edge modes in the lattice of coplanar waveguide resonators.

Python

Summer Schools

Petnica Summer Institute of Machine Learning

August 3rd - 13th, 2019 Petnica, Serbia

- Project on Meta Reinforcement Learning. `psiml.petnica.rs/`

Math and Physics Camps

2013 - 2015 Serbia

- Prepared elementary and high school students for competitions in Mathematics and Physics.
- Devised and graded mock competitions and homework.

Relevant Courses

- Fundamentals of Quantum Information (AP3421)
- Quantum Communication and Cryptography (CS4090)
- Quantum Hardware (AP3292)
- Electronics for Quantum Computation (EE4575)
- Quantum Transport (AP3281)
- Modelling of Superconducting Devices (AP3472)

Skills

Python Julia C/C++ Java Qiskit Cirq PennyLane OpenFermion TensorFlow Kwant