Curriculum Vitæ

"Computers are good at following instructions,
but not at reading your mind." – Donald Knuth

Contact Information

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Date of birth	21. September 1995 in Sousse
Nationality	Tunisian

Education

09/2007 – 07/2010 **College**, *College Bhaier Hammem Sousse*, Sousse, Tunisia.

09/2010 – 07/2014 **High School**, *Lycée Pilote de Sousse*, Sousse, Tunisia.

09/2014 – 04/2015 **University**, *Institut Préparatoire Aux Études D'ingénieurs El Manar*, Tunis, Tunisia.

04/2015 – 08/2015 **Language School**, *Inlingua*, Stuttgart, Germany.

08/2015 – 10/2015 **Language School**, *Mannheim University*, Mannheim, Germany.

04/2016 – 4/2020 **University**, *RWTH Aachen University*, Aachen, Germany, *Bachelor*.
Computer Science

04/2020 – present **University**, *RWTH Aachen University*, Aachen, Germany, *Master*.
Computer Science

Experience

04/2018 – 09/2018 **Maths Tutor**, *RWTH Aachen University - Chair D of Mathematics*, Aachen.
A weekly lesson with almost 60 students, in which I correct the submissions of the previous week and discuss the possible solutions and prepare the students of the next subsequent submission tasks.

04/2019 – 08/2021 **Scientific Assistant Student: Software Developer**, *Fraunhofer IPT*, Aachen.

- Design of algorithms based on Bspline functions for solving geometric problems (C++).
- Designing and implementing new software plugin components for Rhinoceros 3D and Grasshopper 3D (Python, C#).
- Creating a Gateway between a machine sending sensor data and a remote database using a MQTT service (Javascript, Python).

09/2021 – present **Scientific Assistant Student: : Software Developer**, *Forschungszentrum Jülich*, Jülich.

- Improving the software infrastructure of an open-source project in the context of computational neuroscience research.
- Automating the code generation of models in making them available at the runtime during the execution of the simulation (Python, Cmake).
- Adjusting the data structure of custom-written models to utilize the efficiency of Cache that supports *SIMD* instructions (C++).
- Analyzing and fixing potential uncovered bugs (Python).

Thesis

03/2019 – 09/2019 **Bachelor Thesis**, *Chair of Computer Science 11 - Embedded Software*, Aachen.
A library for Boolean functions in algebraic normal form (Java).

01/2022 – 07/2022 **Master Thesis**, *Forschungszentrum Jülich*, Jülich.
Just-in-time (JIT) compilation for the NEST Simulator to push the boundaries of neural network sizes on HPC clusters (C++, Python).

Languages

Arabic	**Native**
German	**Advanced**
English	**Advanced**
French	**Intermediate**
Japanese	**Beginner**

IT Skills

Programming Languages	Java, C/C++, C#, Python, JavaScript, Typescript.
Additional Skills	Object-Oriented Programming, Interface Design and Implementation, API Design and Development.
IDE	JetBrains, Visual Studio Code, Eclipse.
Database	MongoDB, GraphQL.
Version Control	Git.

Free Time Activities

In my free time, I like solving some challenging programming task provided by an interesting platform called *Entwicklerheld*. It has the feature of giving a reward on successfully solving the chosen task. Depending on the hardness of the problem, the reward may have different values. In general, the reward is just points between 150 and 1000 points, and the user may afterwards exchange the reward into a voucher. At a certain time, I got addicted to the website, and it was really fun buying stuff by just thinking and programming.

My second interesting hobby after programming is reading books about neuroscience, the secrets behind the human brain and quantum physics. My recent books are:

- Künstliche Intelligenz und der Sinn des Lebens –Richard David Precht.
- Wer bin ich und wenn ja, wie viele? –Richard David Precht.
- Something deeply hidden, quantum worlds and the emergence of spacetime –Sean Carroll.
- Die Physik des Bewusstseins über die zukunft des Geistes –Michio Kaku.