Filderstadt, Germany
Linkedin

Souhail Aghzafen

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Results-driven software engineer with extensive experience in Big Data, mathematical algorithms, and hardware optimization. Proven expertise working with industry-leading OEMs such as BMW, Bosch, Daimler AG and Cariad. Passionate about innovative software solutions, specializing in hardware optimized C++ solutions and data analytics in Python, with strong focus on AI applications and system integration. Multilingual and adaptable to dynamic, international environments.

Work Experience

Senior Software Engineer   **ITK Engineering GmbH**   **2021 - Present**
Data Driven Software and Sensors   Stuttgart, Germany

- Supervision of students and student work, aligning company needs with student activities.
- Project management through Requirements analysis, Requirements life cycle and Requirements engineering.
- Open-Source license compliance, improving process for software releases across multiple projects.
- Creation and development of UI Interfaces using QT and backend functions for Race sensor data management and simulation toolchain in C++.
- Developed Dense and Unified Optical Flow algorithms for Client System on Chip autonomous vehicle sensors in C++ using AVX, CUDA and OpenMP.
- Enhanced database management and query optimization, improving system efficiency, developing data structures and algorithms suitable for efficient processing.

Software Engineer   **ITK Engineering GmbH**   **2018 - 2021**
Software Application   Stuttgart, Germany

- Middleware Operating System for System on Chip AI Systems. Leveraging python, numpy and pandas for efficient data retrieval and processing. Conception and creation of unit tests.
- Medical technology equipment, development of image and data processing features for hardware efficient and time critical medical imaging and video streaming application using C/C++.
- Hardware close conception and creation of system critical messaging and notification system using SNMP and C++ for catastrophe prevention in hydrogen cells.
- Vulkan- Based 3D Engine in C++ and JAVA, conception and creation of efficient rendering pipeline to be used for data visualizations and simulations.
- Conception/creation/optimization of automated test cases Quality assurance of a truck connectivity platform in Java, creation of one Automation framework for GUI testing based on Selenium.

Software Engineer Intern   **ITK Engineering GmbH**   **2018**
Stuttgart, Germany

- Bachelor thesis: Introduction to Wedgelets and an optimization of their runtime using CUDA. Using Radon Transform from Medical Resonance Imaging (MRI) for faster weights computation.
- Creating Excel Marcos in VBA for more efficiency in the functional safety process.

Working Student	**ITK Engineering AG**	**2016-2017**
	Stuttgart, Germany	

- Development and maintenance of a toolchain for functional safety in Excel.

Notable Technologies and Languages

- Languages: Python, C/C++, Java, C#, CUDA, GLSL/HLSL, VBA/VBS, MATLAB.
- Technologies: STL, BOOST, Multithreading, Microsoft SQL Server, Raytracing, Azure, Git, AVX, Pandas, QT, JAVA FX, Tkinter.
- Hardware: x86_64, AArch64, ZUC104 Zynq, ESP8266, NVidia Jetson Nano.
- OS: Windows, Unix/Linux.
- Other: Data structures and algorithms, Parallelization, efficient algorithms, Design Patterns, Agile Development, Continuous Integration and Development (CI/CD).

Education and Certifications

- **M.Sc. Artificial Intelligence,** IUBH, Germany. **2022-now**
- **M.Sc. Mathematics,** University of Tübingen, Germany. **2021 - 2021**
- **B.Sc. Applied Mathematics,** University of Applied Science Stuttgart, Germany. **2016 – 2019**

Personal Projects

- **Fast RPN –** Development of fast reverse polish notation in C++ and python.
- **Unity Native Plugin Framework –** Implementation of a C++ code injection framework for Unity.
- **Pytorch GAN –** Low parameter Generative Adversarial Network using Pytorch.
- **Linear time Chazelle triangulation –** Implementation of Chazelle triangulation in linear time.
- **Capital Fund Management application –** Conception and Development of fund management system with equity prediction and minmax fund distribution using Deep Learning and other regression models.

Other Sections

- **Volunteer work** – French, English and Arabic translator for the social welfare office in Filderstadt.
- **Awards** – Won the yearly mathematical challenges at the university of applied science in Stuttgart twice.
- **Certifications and Courses** – AZ-204 Microsoft Azure Certification, AUTOSAR basics.

Interests

- Big hiker of the Alps and Swiss mountains.
- I am an avid reader of scientific papers and passionate about financial mathematics.

Languages

- German (C1), English (C1), French (B2), Arabic.