MAHMOUD AMMAR

Simulation Software Developer | Mechanical Engineer

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EDUCATION

Technical University of Munich, Germany 2017 - Present
Master of Science (M. Sc.)
Computational Mechanics
Thesis: Implementation of a 4^{th} Order Finite Volume Method

Eastern Mediterranean University, Northern Cyprus 2014 - 2017
Bachelor of Science (B. Sc.), High Honor
Mechanical Engineering GPA: 1.2 [German Grading]
Thesis: Design and Fabrication of a Vertical Axis Wind Turbine

RELEVANT EXPERIENCE

SimScale GmbH Dec 19 - Present
Junior Simulation Software Developer

· Backend development relevant to the platform's LBM/CFD solvers (Pacefish/OpenFOAM)
· Minor frontend development

Python PEP8 Scala Git OpenFOAM JavaScript Agile Software Development

Applied Mechanics Chair - TUM Sep 19 - Oct 19
Graduate Research Assistant

· Implementing a Mortar-coupling for the non-conforming interfaces to the chair's FEM in-house code

Python PEP8 Gmsh Git

Hydromechanics Chair - TUM Apr 19 - Jun 19
Graduate Research Assistant

· Restructured and optimized the implemented mesh generator, and added an aspect ratio option
· Tutored the OpenFOAM lab, and restructured its material for the Turbulent Flows course
· Implementing reading the HDF5 file in the Fortran-based in-house CFD code

Python HDF5 Fortran Git ParaView PEP8 OpenFOAM

Hydromechanics Chair - TUM Nov 18 - Jan 19
Graduate Research Assistant

· Developed a mesh generator for the chair's CFD in-house code with HDF5 output
· Tutored the Advanced Fluid Mechanics course

Python HDF5 Fortran Git ParaView PEP8 LaTeX

SOFiSTiK AG Oct 17 - Aug 18
Simulation Product Management

· Updated and edited the verification and documentation manuals (CFD and FEM)
· Created tutorial videos for the 2018 version using Speech Synthesis Markup Language

LaTeX XML AutoCAD InkScape

TECHNICAL STRENGTHS

Computer Languages	Python, Fortran, Scala, Git, JavaScript, Matlab, XML, C#, C++, Go
CAE Packages	OpenFOAM, SolidWorks, AutoCAD, Kratos MultiPhysics
Others	Linux OS, Bash, ParaView, LaTeX, InkScape, HDF5, PEP8

SELECTED PROJECTS

CFD Analysis of a Split Air Conditioner Aug 19 - Sep 19

C++ **Coupling a Transient Solver with an Immersed Boundary Toolkit** Jul 19 - Aug 19

Python **CFD Analysis for a Pump Design** May 19 - Jun 19

Python **CFD Analysis of the JPMorgan Chase Tower** Nov 18 - Feb 19

Python **Implementation of Space-Time FEM** Mar 18 - Nov 18

Python **Fluid-Structure Interaction with Multiple Interfaces** Jul 18 - Sep 18

Matlab **Implementation of a solver for the NS-Equations** May 18 - Jul 18

CERTIFICATIONS

Advanced Python
Aug 19, *Lynda*

Programming Foundations (Python)
Jan 19, *Lynda*

Introduction to Programming: MATLAB
Dec 17, *Vanderbilt University, Coursera*

Wind Energy
Oct 17, *Denmark Technical University, Coursera*

HONORS

Highest Rank Graduate in the Mechanical Engineering Department
Issued : Jul 2017

Dean's Honor List [5 times]
Issued : 2014 - 2017

The 2010 Regional Ricoh Sustainable Development Award
Issued : Mar 2010

LANGUAGES

English : Fluent (IELTS - Overall Band: 8)
German : Beginner (Level: A1)
Arabic : Native