

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 4th 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


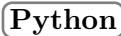

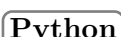
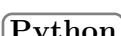
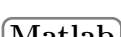
- Updated and edited the verification and documentation manuals (CFD and FEM)
- Created tutorial videos for the 2018 version using Speech Synthesis Markup Language

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
 Coupling a Transient Solver with an Immersed Boundary Toolkit	Jul 19 - Aug 19
 CFD Analysis for a Pump Design	May 19 - Jun 19
 CFD Analysis of the JPMorgan Chase Tower	Nov 18 - Feb 19
 Implementation of Space-Time FEM	Mar 18 - Nov 18
 Fluid-Structure Interaction with Multiple Interfaces	Jul 18 - Sep 18
 Implementation of a solver for the NS-Equations	May 18 - Jul 18

CERTIFICATIONS

Advanced Python Aug 19, <i>Lynda</i>	Introduction to Programming: MATLAB Dec 17, <i>Vanderbilt University, Coursera</i>
Programming Foundations (Python) Jan 19, <i>Lynda</i>	Wind Energy Oct 17, <i>Denmark Technical University, Coursera</i>

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