AHMED H. HANFY

Mechanical Engineer ||
Aerodynamic specialist

PROFILE

Doctoral researcher in the Marie Curie fellowship program with expertise in experimental aerodynamics. Proficient in Python, MATLAB, and C++; skilled in data/image analysis. Proficient in CAD modeling using Autodesk Inventor and adept with Siemens NX. Seeking to contribute expertise, pursue learning, and advance career.

CONTACT ME

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github.com/GameDay

LANGUAGES

English ★★★★

Italian ★★

Polish ★

Arabic ★★★★★

SKILLS

Inventor
Siemens NX
AutoCAD
3D Max
Ansys (Fluent)
Python
MATLAB

OTHER SKILLS

Machine design | Mechanical drawing | FEA | Pneumatics | 3D printing | Pneumatics | C++ | Fortran | OpenMPI | MATLAB GUI | Analysis | Machine learning | PCA | Image analysis | Signal processing | Wind-tunnel operation | LabVIEW |.

ACTIVITIES

Summer trainings [Hydro-electric stations, Diesel engines & Hydraulic maintains (MANTRAC), ASME CFD workshop].
Volunteering [researcher's night, Science Club Chairman, Egypt Scholars Alex. Student Chapter].

EXPERIENCE

Doctoral Researcher (Aerodynamic specialist) [11/2020 - Present]

Institute of fluid-flow machinery polish academy of sciences, Gdansk (Poland)

- Led the test planning to investigate manufacturing and surface roughness effects on the transonic compressor fan profile experimentally.
- Coordinated the collaboration with Rolls Royce Deutschland to apply surface texture to the suction side of the profile.
- Modified the design and provided detailed drawings for an existing single passage compressor fan profile.
- Improved pressure measurement resolution on the suction side of the profile.
- Modeled the piping system to control corner flows, resulting in a 30% increase in suction efficiency.
- Improved the wind tunnel feedback system and fast camera triggering using LabVIEW and DAQ devices with an accuracy of 0.6ms.

Junior engineer / mechanical designer [03/2018 - 09/2018]

Taqat ME (Renewables and Environment), Alexandria (Egypt)

- Designed and modeled sheet metal solar tanks with various sizes.
- Enhanced the water heating process using coil fins by 10%.
- Document the manufacturing process and plan inspection procedures.
- Supervise the manufacturing and inspection of solar tanks.
- Design and supervise the construction of a 20k-liter water tank.

Head of mechanical design and manufacturing [02/2014 - 06/2016]

Torpedo team (student organization-ROV competition), Alexandria (Egypt)

- Mechanical team leader and a part of the team board.
- Design and develop vehicle manipulators.
- Computational analysis specialist (structural and fluid analysis).

SCIENTIFIC VISITS AND INTERNSHIPS

Visiting Researcher [08/2022 – 09/2022]

German Aerospace Centre (DLR), Cologne (Germany)
Unsteady measurements campaign at DLR Transonic Cascade Wind Tunnel.

Research Internship [03/2018 - 09/2018]

Institute of fluid-flow machinery polish academy of sciences, Gdansk (Poland)
Completed a complementary course during my master's studies to acquire knowledge in image analysis.

EDUCATION

Ph.D. Mechanical engineering [11/2020 - Present]

Marie Skłodowska-Curie Actions, Innovative Training Networks HORIZON 2020
Institute of fluid-flow machinery polish academy of sciences, Poland
(Est. Graduation, 2024)

M.Sc. Applied Mathematics and Mathematical Engineering

InterMaths Joint MSc Programme [09/2018 - 05/2020]

- Ivan Franko National University of Lviv (IFNUL), Ukraine [2019 - 2020]
- University of L'Aquila (UAQ), Italy [2018 - 2019]

B.Sc. Mechanical Engineering [09/2011 - 07/2016]

Alexandria University (AU), Egypt

SELECTED PROJECTS

- ROV modelling (Autodesk inventor)
- Water tank metal sheet design (Autodesk inventor)
- CFD applications in oil and gas industry (Multiphase, Fluent – BSc. Project)
- Finite Fringe Analysis for Optical Measurement of Compressible Fluid Flow Parameters (MATLAB GUI application - MSc. Thesis)

ACHIEVEMENTS AND AWARDS

MATE ROV 2015, 2016 and 2017 (Torpedo robotics - AU)

- The team achieved 2nd place in the regional competition, ranking 20/600 worldwide.
- The team had international representation at:
  [Long Beach City College, USA (2017),
  NASA Neutral Buoyancy Laboratory, USA (2016),
  and Memorial University of Newfoundland, Canada (2015)].

Full CV