

Professional Experience

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| since 04/2022 | <p>Nuvaya Hendese Technologies GmbH <u>Tasks:</u> Founder & CEO <u>Company Profile:</u></p> <ul style="list-style-type: none">- https://nuvaya-technologies.de- A holistic engineering & technology partner- Virtual product development services (CFD, FEM, CAD)- Developing Cloud Computing as a Service (SaaS)- Additive Manufacturing - 3D metal printing service- Supply high-tech engineering parts and rapid prototyping- Genetic Algorithm based Optimization- Business strategy & development- Marketing & Sales- Customer acquisition |
| since 03/2023 | <p>DHBW Karlsruhe (Cooperative State University) <u>Tasks:</u> Lecturer (honorarium lecturer) <u>Study Program & Course:</u> Sustainable Science Technology</p> <ul style="list-style-type: none">- Thermodynamics and fluid dynamics (both lectures and examination) |
| 02/2021 - 04/2022 | <p>Turkish Aerospace Industries <u>Department:</u> Modeling and Simulation <u>Position:</u> Chief & Chief Engineer of group "Thermal Analysis and Fluid Dynamics"</p> <p><u>Topics:</u></p> <ul style="list-style-type: none">- Numerical thermo-fluid simulations for internal and external flows- Personnel responsibility of engineering group- Realignment of engineering group to increase capacity utilization- Leadership & Management |
| 01/2017 - 08/2020 | <p>Robert Bosch GmbH <u>Department:</u> New Systems Eng. <u>Position:</u> Project Manager R&D</p> <p><u>Topics:</u></p> <ul style="list-style-type: none">- Responsible for innovation project with local and international team and stakeholder- Innovation project: Decrease CO2 emissions of powertrain system- Design, organize, initiate and coordinate the implementation of a multi-discipline division-wide innovation project to increase drivetrain efficiency- Optimization of coordination of a cross-functional and international project team within multi-layered stakeholder structures |
| 03/2012 - 12/2016 | <p>Robert Bosch GmbH <u>Department:</u> Combustion System Engineering, New Systems Eng. <u>Position:</u> Development Engineer <u>Tasks:</u> Thermodynamics & Efficiency</p> <p><u>Topics:</u></p> <ul style="list-style-type: none">- Energy efficiency and emissions- Thermodynamic analysis of combustion and engine process- 3D CFD in-cylinder simulation- 1D engine & flow simulation- System simulations |

- 05/2011 - 02/2012**
 - Gasoline Injection System
 - Engine test-bench operation**Bertrandt Technikum GmbH**

Department: Calculation/Simulation
Position: Calculations engineer, thermal management & fluid mechanics
- 07/2011 - 11/2011****Robert Bosch GmbH***

Department: Simulations support for development
Position: Calculations engineer
Tasks: 3D-CFD Simulation
Topics:
 - *Conjugate heat transfer* and thermal radiation for thermo-solar modules and photovoltaics modules
 - inward flow of gasoline high-pressure injectors

Academic Experience

- 07/2010 - 12/2010****German Aerospace Center (DLR)**

Department: Institute of Space Propulsion
Position: Diploma thesis
Title of thesis:
"Numerical Investigation of the Pressure Profile in coupled Porous Shell Structures for Effusion-Cooled Nozzle Extensions"
- 06/2009 - 06/2010****German Aerospace Center (DLR)**

Department: Institute of Combustion Technology
Position: First thesis ("Studienarbeit")
Title of Thesis:
"Numerical Simulation of a Ethanol Spray Burner"
Content of Project: Simulation of a spray combustion for the validation of the coupling between a gas phase solver (Euler) for the combustion and a spray code (Lagrange, *discrete particle*) to account for the droplet dynamics and evaporation
- 04/2009 - 07/2009****Institute of Aerodynamics and Gasdynamics**
11/2008 - 02/2009**University of Stuttgart**

Position: Assistant scientist
Task:
CFD Analysis of mass-neutral microjet-actuators for airfoils
- 08/2006 - 09/2007****Institute of Space Systems**
University of Stuttgart

Position: Assistant scientist
Tasks:
 - Designing and building a measurement environment with LabView for data processing on a ion-thruster
 - Designing a code with Matlab for the evaluation of measurement data of a re-entry experiment

Internships

- 10/2007 - 02/2008****Rolls-Royce Germany Ltd & CO KG**

Department: Aircraft engine aerodynamics

Tasks:

- CFD investigation for the prediction of the pressure loss in the bypass of a turbofan aircraft engine
- Deriving a analytic surface function for the pressure loss in the bypass on basis of the CFD results
- Deriving a analytic surface function for the pressure loss in the bypass on basis of the CFD results
Analytic calculation and comparison of different pressure losses on basis of subscale-model test data
- Evaluation of fluid mechanical data resulting from acoustic noise measurements

04/2006 - 04/2006

Daimler AG

Department: Metal foundry

Task: two-week mandatory base internship

07/2005 - 08/2005

Vallourec & Mannesmann Tubes

Department: Metal machining

Tasks: mandatory base internship

Education

10/2005 - 12/2010

University of Stuttgart

Subject: Aerospace Engineering

Degree: Diplom-Ingenieur (incl. M.Sc. equivalent certification)

Specialization:

1. Thermodynamics
2. Fluid Dynamics

Grade: very good, graduation within standard duration of study

07/1996 - 06/2005

Max-Planck-Gymnasium (grammar school), Duisburg

Degree: Abitur (A-levels)

Major subjects: Mathematics, Physics

Grade: excellent

Publications

09/2015

“Spray-guided lean combustion concept with multi-hole solenoid injectors for turbocharged Si-engines - Different combustion process strategies influencing NOx and Soot engine-out emissions“, A. Kiefer, M. Alp, M. Lippisch, A. Storch, A. Kufferath, 15th Conference The Working Process of the Internal Combustion Engine, Graz, Austria

12/2018

“Passive Pre-chamber Spark Plug for Future Gasoline Combustion Systems with Direct Injection“, M. Blankmeister, M. Alp, E. Shimizu, 4th International Conference on Ignition Systems for Gasoline Engines, Decmeber 2018, Berlin, Germany

Patents

“Vorkammerzündkerze mit Zusatzvolumen”

“Pre-chamber spark plug with additional chamber volume”

Device to decrease CO2 emissions, Publication ID:

DE1020202385A1, Inventor: Muhammed Alp, Applied by: Robert Bosch GmbH, Stuttgart, Pending/Public Disclosure 25.03.2021

Awards

05/2005

German Society of Physics (DPG)

Honoring excellent performance in the subject physics

Expertise & Skills

Leadership, Management, Business Strategy, Business Development, Delegation, Empowerment, Engineering, Additive Manufacturing, Machine Learning, Neural Networks, Marketing, Thermodynamics, Fluid Dynamics, Computer Simulations, Energy Systems, Aerodynamics, Combustion Technology, Powertrain, Energy Efficiency, Cloud Computing

Languages

German (native level, bilingual)
Turkish (native level, bilingual)
English (fluent spoken and written)
Arabic (modern standard arabic, Level A2)

Dipl.-Ing. (M.Sc.) Muhammed Alp