Mahdi TABATABAEI MALAZI

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EDUCATION

Ph.D., Mechanical Engineering   (August 2016)
Yildiz Technical University, Istanbul, Turkey
Dissertation Title: "*Numerical and experimental Investigation of locomotion Real Squids and models for design (AUVs)Using Computational Fluid Dynamics (CFD), FSI, ASO and PIV-(bio-inspired)*"
Project Including: Aerodynamics (drag and lift force), Jet proportions, Fluid Structure Interaction, Aerodynamic Shape Optimization (ASO), Turbulence models (RANS (k-ε, SST k-omega) and LES), Dynamic mesh, ANSYS-Fluent (UDF) and **C** Programing Language
**Project Funded by TÜBİTAK *(Scientific and Technological Research Council of Turkey)*
Advisor: Prof. Dr. H. A. Heperkan, Co-adviser: Asst. Prof. A. B. Olcay
Publications: Four papers and one conference were published
GAP: 3.80 from 4

M.Sc., Mechanical Engineering,   (September 2009)
Tabriz Azad University, **Tabriz, Iran**
Dissertation Title: "*An Enhanced Finite-Volume Solution of Incompressible Flow with Heat Transfer in a Backward-Facing Step*"
Project Including: New scheme for numerical solution of N-S equations, using **FORTRAN** Programming Language
Advisor: Prof. Dr. S. R. Razavi, Co-adviser: Prof. Dr. M.T. Shervani-Tabar
Publications: One papers and one conference were published
GAP: 3.48 from 4

B.Sc., Mechanical Engineering,   (September 2006)
Takestan Azad University, Iran
Thesis Title: "*Design of Machines Vibrating Signal Analyzer Device*"

RESEARCH EXPERIENCE and JOB

Lecture (Asst. Prof. Dr) **at Isatanbul Aydin University, Turkey**   (February 2017- Present)
I have lectured Fluid Mechanics, CFD and Heat Transfer.

Gebze Technical University, Istanbul, Turkey   (April 2015 – January 2017)
Project Title: "*Design and numerical simulation of cooling system for electrical vehicles*"
Project Funded by TÜBİTAK (Scientific and Technological Research Council of Turkey)
Full Time Project Research Assistant (April 2015- August 2016)
Postdoc Research (August 2016 – January 2017)
Project Manager: Asst. Prof. M. F. Serincan
In this project: Design, numerical simulation (CFD) and models manufacturing of an electrical automobile cooling system (Thermal Management of Lithium Ion Batteries with Liquid Cooling (water)). In this project heat transfer was investigated at different conditions such as different channels design, different Re numbers, different turbulence models, design various fins (vortex generator) for using better heat transfer and multiphase heat transfer.

*Yeditepe University, Istanbul, Turkey   (August 2013 – March 2015)
Project Title: "*Numerical simulation of Real squid for design autonomous underwater vehicles (AUVs)*", (*Bio-inspired*).
Project Funded by TÜBİTAK (Scientific and Technological Research Council of Turkey)
Full Time Project Research Assistant (This project is my Ph.D. Thesis)
Advisor: Asst. Prof. A. B. Olcay
In this project: Numerical simulation (CFD) and experimental (PIV) of a real squid and also the aerodynamics (drag and lift force) of its body, its jet proportions for thrust force, the efficiency of its jet proportions, vortex rings at turbulent flow condition, the fluid structure interaction for moving walls (FSI) (writing codes for Dynamic mesh (UDF)), construction of the CAD geometry of the real squid (obtained CAD geometry from real Squid body), its turbulence models and its aerodynamic shape optimization (ASO) for designing a new aerodynamic body with reduced drag force and better lift force for compressible and incompressible flow and also different turbulence models were studied at thıs project (K-epsilon (k-ε), SST k-omega and LES).
Publications: Four papers and one conference

Bahcesehir University, Istanbul, Turkey   (February 2012 – July 2012)
In this project: "*Flow simulation of human heart*"
The project was funded by SAN-TEZ (Industry Theses Program).
Full Time Project Research Assistant
Advisor: Professor. Dr. Kamuran Kadıpasaoglu
Numerical simulation (CFD): Modeling and simulation of blood flows at different velocities (turbulent flow) and motion of heart walls for pumping blood in human heart fluid structure interaction for moving walls (FSI) (writing codes for Dynamic mesh (UDF)).

Other project done.

1- Numerical investigation **(CFD-Fluent)** of heat transfer at different tubes geometry with fin and without fin for normal water and Nanofluids. (Paper published)- **(Heat transfer and fluid flow)**

2- Numerical investigation **(CFD- FORTRAN Programing Language)** of flow over NACA 0012 airfoil for at different angle of attacks. (Paper published)- **(New scheme for solutıon N-S equation at high speed for compressible flow)**

3- Numerical investigation **(CFD-Fluent)** of accretion circle and ellipse at incompressible flow. (Paper submitted)

4- Simulation moving wall **(Dynamic mesh, UDF, C Programing Language)** expansion and shrinkage of a body at movement flow.

5- Numerical investigation **(CFD-Fluent)** of high speed train.

6- Numerical investigation **(CFD-Fluent)** of clean room and simulation of particles by using Discrete Phase Model (DPM). (Conference paper submitted)

PUBLICATIONS

Journal Publications:

M. Tabatabaei Malazi and A. B. Olcay., "The effects of a longfin inshore squid's fins on propulsive efficiency during underwater swimming", Ocean Engineering, 128 (2016) 173–182. **(From Ph.D. Thesis)**

M. Tabatabaei Malazi and A. B. Olcay., **"**Investigation of a longfin inshore squid's swimming characteristics and an underwater locomotion during acceleration", Applied Ocean Research, 55 (2016) 76–88. **(From Ph.D. Thesis)**

Olcay, A.B., **Malazi T.M.**, Okbaz, A., Heperkan, H.A., Firat, E., Ozbolat, V., Gokcen, M.G. and Sahin, B., "Experimental and Numerical Investigation of a Longfin Inshore Squid's Flow Characteristics", JAFM, accepted (2016). **(From Ph.D. Thesis)**

M. Tabatabaei Malazi., A. Okbaz., A. B. Olcay., "Numerical investigation of a longfin inshore squid's flow characteristics", Ocean Engineering, 108 (2015) 462–470. **(From Ph.D. Thesis)**

N. Nozari., S. E. Razavi., **M. Tabatabaei Malazi.,** "Improved Characteristic-based Solutions of the Euler Equations in Transonic Regimes", Flow Turbulence Combust (2015) 94:577–591.

N. Kayaci., M. Balcilar., **M. Tabatabaei Malazi.,** A. Celen., O. Yildiz., A. S. Dalkilic., S. Wongwises., "Determination of the Single-Phase Forced Convection Heat Transfer Characteristics of TiO2Nanofluids Flowing in Smooth and Micro-Fin Tubes by Means of CFD and ANN Analyses" Current Nanoscience 02/2013; 9(1):61-80.

A. S. Dalkilic., N. Kayaci., A. Celen., **M. Tabatabaei Malazi**., O. Yildiz., W. Daungthongsuk., S. Wongwises., "Forced Convective Heat Transfer of Nanofluids - A Review of the Recent Literature", Current Nanoscience 12/2012; 8(6):949-969.

N. Nozari., **M. Tabatabaei Malazi.,** S. E. Razavi., "Characteristic-Based Algorithm for Simulating Rotational Behavior of the Euler Equations in Transonic Regimes", American Journal of Scientific Research, Issue 58(2012) pp 65-74.

M. Tabatabaei Malazi and S. E. Razavi., "An Enhanced Finite-Volume Solution of Incompressible Flow with Heat Transfer in a Backward-Facing step", International Review of Mechanical Engineering (IREME). September, 2009. **(From M.Sc. Thesis)**

Conference Papers:

M. Tabatabaei Malazi., A. B. Olcay., G. Gokçen., H. A. Heperkan., "Drag force and jet propulsion investigation of a swimming squid", The European Physical Journal Conferences 05/2015; 92:02092. (**From Ph.D. Thesis**)

N. Kayaci., **M. Tabatabaei Malazi.,** A. S. Dalkilic., S. Wongwises., "Numerical investigation of the single phase forced convection heat transfer characteristics of nanofluids flowing in circular and noncircular tubes", ASME 2015 International Mechanical Engineering Congress & Exposition, November 13-15, 2015, Houston- Texas

M. F. Serincan and **M. Tabatabaei Malazi**., "Thermofluids Analysis of the Coolant Flow during Lithium-Ion Battery Operation", 227th ECS Meeting, May 24-28 Chicago 2015

N. Kayaci., **M. Tabatabaei Malazi.,** A. Celen., O. Yildiz., A. S. Dalkilic., S. Wongwises., "Numerical investigation of heat trasfer enhancement using water based nanofluids flowing in enhanced tubes", ASME 2012 International Mechanical Engineering Congress and Exposition; 11/2012

M. Tabatabaei Malazi and S. E. Razavi., "An Enhanced Finite-Volume Solution of Incompressible Flow in a Backward-Facing step", 12th Fluid Dynamics, Conference, Babol Noshirvani University of Technology; 04/2009.

TEACHING EXPERIENCE

I have lectured **ANSYS-FLUENT** software at a private institute (www.ucuncubinyil.com). 2013–Present
Teaching design part (Design Module), Meshing part and Fluent software.

I have lectured **CFD-methods** at a private institute (www.ucuncubinyil.com). 2013–Present
Writing finite-volume method codes by using **FORTRAN, MATLAB, C Programing Language**
Writing **UDF** (User Define Function) codes for Fluent software

AWARDS AND HONORS

My Ph.D. thesis will select as the best thesis in 2016 between Ph.D. theses of mechanical engineering at Yildiz Technical University

Document of congratulations for high number of publications during (Ph.D.) Yildiz Technical University (2013 and 2015).

Selected as fourth best GAP's student during my M.Sc. studies in the Engineering Faculty.

Accepted for full scholarship for study Ph.D. at Azad University Science & Research branch. 2009, Tehran, Iran.

Accepted for study Ph.D. at University of Stuttgart-Institute of Fluid Mechanics and Hydraulic Machinery (IHS)-2011, Stuttgart-Germany

RESEARCH INTERESTS

Computational Fluid Dynamics Methods (CFD), Heat Transfer, Aerodynamic, Jet propulsion, fluid structure interaction (FSI), Bio-Inspired Design Engineering, Autonomous Underwater Vehicle (AUV) Designing and Numerical Simulation, Aerospace Aerodynamic, Wind turbine, Nanofluids, Image Processing of real body, Multiphase flow, Meshing and modeling.

LANGUAGE SKILLS

Azerbaijani   Native or bilingual proficiency

Persian   Native or bilingual proficiency

Turkish   Native or bilingual proficiency

English   Full professional proficiency

REFERENCES

Prof. Dr. Hasan Aalpay HEPERKAN
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Istanbul Aydın University (Dean of Engineering Faculty, 2016-Present)
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