Jibran Haider, M.Sc

Address: Laboratory of Computational Methods and Numerical Analysis, Polytechnic University of Catalunya (UPC BarcelonaTech), Campus Nord, Barcelona, 08034, Spain

Mobile: +34 (0) 602 437 319

Email: m.j.haider@swansea.ac.uk, jibranhaider@gmail.com

Website: http://www.jibranhaider.weebly.com

Current position

[2014 - present] **Research assistant** at Zienkiewicz Center for Computational Engineering (ZCCE), College of Engineering, Swansea University, UK.

Academic qualifications

[2014 - present] **Doctoral candidate** in computational mechanics (Erasmus Mundus SEED) at Zienkiewicz Center for Computational Engineering (ZCCE), Swansea University, UK and Laboratori de Càlcul Numèric (LaCàN), Universitat Politècnica de Catalunya (UPC BarcelonaTech), Spain with the thesis entitled: "*A first order hyperbolic framework for large strain computational solid dynamics: An upwind cell centred Finite Volume Method*".

[2011 - 2013] **Master of Science** in computational mechanics (Erasmus Mundus MCM) from Universität Stuttgart, Germany and UPC BarcelonaTech, Spain with the thesis entitled: "*Numerical modelling of evaporation and condensation phenomena*".

[2005 - 2009] **Bachelor of Engineering** in mechanical discipline from National University of Sciences and Technology (NUST) with the thesis entitled: "*CFD and experimental study of flow over cylindrical fins*".

Research interests

- Numerical methods for computational mechanics.
- Large strain fast-transient dynamics.
- Contact and impact mechanics.
- Computational Fluid Dynamics.
- Fluid-structure interaction.

Academic career

[2014 - present] **Research assistant** at Zienkiewicz Center for Computational Engineering (ZCCE), College of Engineering, Swansea University, UK.

[2011] **Research assistant** at King Fahd University of Petroleum and Minerals (KFUPM), Dhahran, Saudi Arabia.

Professional career

[2013]	Master thesis student at Transport and Propulsion Systems Department, **German Aerospace Center** (DLR). Development of a two phase flow model based on the Volume Of Fluid (VOF) method, capable of simulating heat transfer and interfacial phase change phenomena and implemented in the open-source CFD software package in OpenFOAM.
[2012]	Internee at Transport and Propulsion Systems Department, **German Aerospace Center** (DLR). Numerical simulation of sloshing behaviour of liquids in cylindrical tanks using the commercial CFD software package FLOW-3D.
[2010]	Management trainee at **Fauji Fertilizer Bin Qasim Limited** (FFBL). Designing of fixed tubesheet heat exchangers using COMPRESS software. Management of material and their inspection plans in SAP.

Honours and awards

[2016]	'**Student Best Paper Award**' received for our article 'Large strain solid dynamics in OpenFOAM' at the '4^{th} OpenFOAM User Conference' conducted by ESI group.
[2016]	Received **travel award** from International Association for Computational Mechanics (IACM) to present in the World Congress in Computational Mechanics (WCCM).
[2014 - 2017]	'**Erasmus Mundus doctorate scholarship**' awarded by the European Commission.
[2011 - 2013]	'**Erasmus Mundus postgraduate scholarship**' awarded by the European Commission.
[2009]	'**Presidents Gold Medal**' awarded for achieving the highest Cumulative Grade Point Average (CGPA) of $3.75/4.00$ in the batch of Mechanical Engineering during the Bachelor degree.
[2009]	'**Rectors Gold Medal**' awarded for undertaking the best Bachelor thesis titled '*CFD and experimental study of flow over cylindrical fins*'.
[2009]	Obtained 2^{nd} position for Bachelor thesis at the 4^{th} International Mechanical Engineering Congress organised by the Institution of Engineers Pakistan (IEP).
[2006 - 2009]	**Undergraduate scholarship** awarded by National University of Sciences and Technology (NUST) for achieving semester Grade Point Average (GPA) in excess of $3.5/4.0$ for six consecutive semesters.

Journal publications

[In-preparation]	**J. Haider**, C. H. Lee, A. J. Gil, A. Huerta and J. Bonet. "*Contact dynamics in OpenFOAM*", Journal of Computational Physics (JCP).
[In-preparation]	A. J. Gil, C. H. Lee, J. Bonet, A. Huerta and **J. Haider**. "*Adapted Roe's Riemann solver in explicit fast solid dynamics*", Journal of Computational Physics (JCP).
[April 2016]	**J. Haider**, C. H. Lee, A. J. Gil and J. Bonet. "*A first order hyperbolic framework for large strain computational solid dynamics: An upwind cell centred Total Lagrangian scheme*", International Journal of Numerical Methods in Engineering (IJNME), DOI: 10.1002/nme.5293.
[Dec 2010]	**J. Haider**, S. N. Danish, W. A. Khan, U. Mehdi and B. A. Abbasi. "*Heat transfer and fluid flow over circular cylinders in cross flow*", NUST Journal of Engineering Sciences (NJES), Vol. 3, No. 1, ISSN 2070-9900.

Invited presentations / workshops

[Oct 2016] ***Invited presentation:***
J. Haider, C. H. Lee, A. J. Gil, J. Bonet and A. Huerta. "*Large strain solid dynamics in OpenFOAM*" at '4th OpenFOAM User Conference' conducted by ESI group.

[June 2016] ***Invited workshop:***
J. Haider. "*OpenFOAM workshop for beginners: Hands-on training*" at LaCàN, UPC BarcelonaTech.

[May 2016] ***Invited presentation:***
J. Haider, C. H. Lee, A. J. Gil, J. Bonet and A. Huerta. "*A first order hyperbolic framework for large strain computational solid dynamics*" at LaCàN, UPC BarcelonaTech.

Conference talks

[July 2016] ***Presenter at World Congress in Computational Mechanics (WCCM):***
J. Haider, C. H. Lee, A. J. Gil, J. Bonet and A. Huerta. "*A first order hyperbolic framework for large strain computational solid dynamics: An upwind Finite Volume Method*".

[June 2016] ***Co-author at ECCOMAS Congress:***
C. H. Lee, **J. Haider**, A. J. Gil, J. Bonet and A. Huerta. "*A first order hyperbolic framework for large strain computational solid dynamics: An upwind Finite Volume Method*".

[July 2015] ***Co-author at US National Congress on Computational Mechanics (USNCCM 13):***
A. J. Gil, **J. Haider**, C. H. Lee, J. Bonet and A. Huerta. "*A first order conservation law formulation for Lagrangian fast solid dynamics in OpenFOAM*". In Proceedings of the 13th US National Congress on Computational Mechanics, San Diego, July 26-30, 2015.

[April 2015] ***Presenter at ACME conference:***
J. Haider, A. J. Gil, J. Bonet, C. H. Lee and A. Huerta. "*A first order conservation law formulation for fast solid dynamics in OpenFOAM*". In Proceedings of the 23rd UK National Conference of the Association for Computational Mechanics in Engineering, Swansea, April 8-10, 2015.

Trainings

[Sep 2014] Attended the OpenFOAM Foundation and Advanced training courses offered by ESI-OpenCFD in London, UK.

Softwares

Computational Fluid Dynamics: OpenFOAM, ANSYS FLUENT, FLOW-3D.

Programming: C++, MATLAB, Fortran, Shell.

Pre / post-processing: ANSYS Workbench, SolidWorks, GMSH, SALOME, ParaView.

Others: LaTeX, OpenMPI, COMPRESS, HTML, STAAD.