

Mahzad Khoshlessan

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EDUCATION

- **PhD, Mechanical Engineering, Arizona State University** Tempe, AZ
GPA: 4.00/4.00 (Advisor: Prof. Oliver Beckstein) 2016 – Present
- **M.Sc., Aerospace Engineering, Amirkabir University (Tehran Polytechnic)** Tehran, Iran
GPA 3.91/4.00 (Advisor: Prof. S.M.H Karimian) 2010 – 2013
- **B.Sc., Aerospace Engineering, Amirkabir University (Tehran Polytechnic)** Tehran, Iran
GPA 3.51/4.00 (Top 5% among Aerospace Engineering Students) 2006 – 2010

EXPERIENCE

- **Arizona State University** Tempe, AZ
Research and Teaching Assistant Fall 2016 - Present
 - **Research Assistant - Parallel Analysis in MDAnalysis Library (SPIDAL project):** The overall goal of the SPIDAL project is to create middleware and analytics libraries to allow data science to work at large scale on high-performance computing systems.
 - **Research Assistant - Dimensionality reduction approaches for finding rate limiting slow degrees of freedom in complex molecular dynamic structures:** The overall goal of this project is to implement machine learning approaches in order to find slow degrees of freedom for the study of Thermus thermophilus antiporter NapA.
 - **Teaching Assistant - Experimental Mechanical Engineering:** an experimental lab course that provides students with an opportunity to apply the theoretical concepts in thermodynamics, heat transfer, and fluid mechanics into practice, in addition to teaching basic measurement techniques and methods for thermo-fluid systems.
- **Arizona State University** Tempe, AZ
Organizing Committee Spring 2017
 - **BioPhest 2017:** I was among the organizing student committee for Bio-Phest 2017 which is an annual event that allows scientists from Arizona with an interest in biological physics to meet for a day of short talks, posters and lively discussion.
- **Arizona State University** Tempe, AZ
Research Asistant Fall 2014 - May 2016
 - **Research Assistant - Large Eddy Simulation (LES) of Flow Inside a Volumetric Solar Receiver (AORA Project):** Validation & verification of Large eddy simulation of flow and heat transfer inside a volumetric solar receiver that can be used within a power generation cycle in a solar power plant. The receiver makes use of pressurized air as the heat transfer fluid and the energy input to the solar receiver is from concentrating solar collectors.
- **Iran Aircraft Manufacturing Industrial Company** Tehran, Iran
Aerospace Engineer- Conceptual Design of J+150 Jan 2014 - July 2014
- **Amirkabir University of Technology** Tehran, Iran
Research Assistant 2011 - 2013
 - Research Assistant-Numerical Investigation of Unsteady Flow over a Gurney Flapped Airfoil with Plunge Oscillation

- **Sigma Co.** Tehran, Iran
Aerospace Engineer *June 2010 - June 2011*
- **Amirkabir University of Technology** Tehran, Iran
Undergraduate Research Assistant *2009 - 2010*
 - Experimental Investigation of Incompressible Unsteady Flow over Pitching Airfoil
- **Dorna Co.** Tehran, Iran
Aerospace Engineer Intern *Summer 2009*
- **Amirkabir University of Technology** Tehran, Iran
Design and Fabrication of a Controllable Hovercraft, 2nd Students Aerospace Competition *2008*
- **Amirkabir University of Technology** Tehran, Iran
Design and Construction of an Indoor Controllable Balloon, 1st Students Aerospace Competition *2007*

HONORS AND AWARDS

- **Member of Tau Beta pi**, The engineering honor society, Arizona State University 2014-present
- **Best M.Sc. Thesis** of Aerospace Engineering Department 2013
- **National Doctorate Entrance Exam Exemption** 2013
- **Top Graduate Students Award** 2013
- **Deans List**, Aerospace Engineering Department 2006-2013
- **Member of Exceptional Talents Office** 2006-2013
- **Best B.Sc. Thesis** of Aerospace Engineering Department 2010
- **National Masters Entrance Exam Exemption** 2010
- **Top Undergraduate Students Award** 2010
- **Award (500\$) for an aircraft design group project**: Conceptual Design of GRJ-110,
→ A Green Regional Jet Suitable for Iranian Domestic, and Regional Routes 2010

PUBLICATIONS

- Paraskevagos, I., Luckow, A., **Khoshlessan, M.**, Beckstein, O., Fox, G.C., Jha, S., Task-parallel Analysis of Molecular Dynamics Trajectories, 17th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing. Madrid, Spain, May 14-17, 2018, (Submitted for review).
- **Khoshlessan, M.**, Paraskevagos, I., Jha, S., and Beckstein, O., Parallel Analysis in MDAnalysis using the Dask Parallel Computing Library, Proceedings of the 16th Python in Science Conference, pages 64-72, Austin, TX, 2017; DOI 10.25080/shinma-7f4c6e7-00a.
- **Khoshlessan, M.**, and Karimian, S.M.H., Detailed Numerical Study on the Aerodynamic Behavior of a NACA 0008 Airfoil Fitted with Gurney Flap in the Regime of Ultra-low Reynolds Number, Journal of Aerospace Technology and Management- Vol 9, No 2 (2017); DOI: <http://dx.doi.org/10.5028/jatm.v9i2.631>.
- Kannan, K., **Khoshlessan, M.**, Herrmann, M., and Peet, Y., Detailed Numerical Study of Flow and Heat Transfer in Staggered Pin-Fin Arrays Within a Channel, Proceedings of the ASME 2016 TURBO EXPO & Turbomachinery Technical Conference & Exposition IDETC/CIE 2016 June 13-17, 2016, Seoul, COREA; DOI:10.1115/GT2016-57968.

- **Khoshlessan, M.**, Karimian, S.M.H., and Mani, M., Numerical Study of Transient Behavior of a NACA 0008 Airfoil Equipped with a Gurney Flap Using a Control-Volume Based Finite-Element Collocated Scheme (AIAA 2014-1109), 52nd Aerospace Sciences Meeting, 2014, 10.2514/6.2014-1109.
- **Khoshlessan, M.**, Karimian, S.M.H., and Daemi, N., Evaluation of a Control-Volume Based Finite-Element Collocated Scheme for the Solution of External Steady and Unsteady Incompressible Flows at Low Reynolds Numbers, 11th International Conference of Numerical Analysis and Applied Mathematics 2013, AIP Conf. Proc. 1558, 1421-1424 (2013); doi: 10.1063/1.4825783.
- Daemi, N., Karimian, S.M.H., Alisadeghi, H. and **Khoshlessan, M.**, Comparison of Different Schemes for Convection Modeling of Incompressible Flow Equations on Unstructured Grids, 11th International Conference of Numerical Analysis and Applied Mathematics 2013, AIP Conf. Proc. 1558, 1425-1428 (2013); doi: 10.1063/1.4825784.

PRESENTATIONS & POSTERS

- SciPy 2017, Austin, TX, Poster: Parallel Analysis in MDAnalysis using the Dask Parallel Computing Library.
- BioPhest Meeting 2017, Arizona State University, Tempe, AZ, Poster: Detection of Slow Degrees of Freedom in Absolute Binding Free energy Calculations of Sodium Ions to the Sodium/Proton Antiporter NapA.
- Guest Lecture: Turbulent Mixing and Heat Transfer Augmentation by Forced Convection in Arrays of Short Pin-fins- Advanced Heat Transfer Course- School for engineering of matter, transport and energy (SEMTE) Arizona State University

SKILLS

- **Languages:** Python, Pandas, Fortran, Open-MP, MPI, Dask, Distributed, Bash Shell, Nek5000, Matlab, Maple, Mathematica
- **Simulation:** ANSYS, Comsol, Hypermesh
- **Visualization:** Tecplot, VisIt, Paraview
- **Miscellaneous:** Latex