Ramin Mardani

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Education

University of Toronto — Toronto, Canada

Master of Applied Science degree in Mechanical Engineering - GPA: 3.90 *2018 – 2020*

Thesis: Computational Simulation of Recellularization and Optimization of Tubular Scaffolds inside Perfusion Bioreactors

Prominent Coursework: Data Science and Data Analytics, Big Data Science, Deep Learning, SQL for Data Science, Applied CFD, and Leadership.

Sharif University of Technology — Tehran, Iran

Master of Applied Science degree in Aerospace Engineering - GPA: 3.81 *2015 – 2017*

Thesis: Lattice Boltzmann Method (LBM) Computational Simulation of Oscillations Caused by Formation and Detachment of Drops

Prominent Coursework: Aerodynamics, Advanced Mathematics, Computational Fluid Dynamics, Fluid Flow Control, and Multiphase Flow.

Azad University of Central Tehran — Tehran, Iran

Bachelor degree in Mechanical Engineering - GPA: 3.67 *2010 – 2014*

Thesis: Analyzing Centrifugal Pumps and Suggestion of New Ways for Achieving Higher Efficiency

Prominent Coursework: Fluid Mechanics, Thermodynamics, Cooling & Refrigerating Systems, Central Heating and Air Ventilation (HVAC), Fuel and Combustion, Mechanics of Materials, and Component Design.

Work Experience

University of Toronto — Toronto, Canada

Teaching Assistant - Control Systems I *Sep '19 – Dec '19*

Responsibilities: Delivering a range of teaching and assessment activities including tutorials directed towards the delivery of subjects at undergraduate level.

Working Women Community Centre — Toronto, Canada

High School Math Tutor *Sep '18 – Sep '19*

Responsibilities: Teaching basic skills encompassing math, science, English, and literature, supporting academic enrichment activities including homework help and tutoring, providing individualized and team wide support all after school program activities and initiatives.

Sharif University of Technology — Tehran, Iran

Teaching Assistant - Advanced Fluid Mechanics *Sep '17 – Dec '17*

Responsibilities: Providing technical support for the course, posting course materials and filling in the details connecting the videos to the appropriate sections in the course, marking and providing student feedback on assignments and final exam, running office hour sessions to answer questions regarding final project and assignments.

Teaching Assistant - Calculus II *Jan '17 – May '17*

Responsibilities: Delivering a range of teaching and assessment activities including tutorials directed towards the delivery of subjects at undergraduate level, applying departmental processes related to peer advising/mentoring, supporting with faculty research projects; engage in literature searches.

Teaching Assistant - Advanced Mathematics *Sep '16 – Dec '16*

Responsibilities: Contributing to the development of appropriate teaching materials to ensure content and methods of delivery meet learning objectives, participating in the assessment process using a variety of methods and techniques and provide effective timely and appropriate feedback to students to support their learning, supervising practical work advising on skills methods and techniques to assist the transfer of knowledge.

Energy Keshvar Co. — Tehran, Iran

Research & Development Expert *May '15 – Sep '15*

Responsibilities: Turning research ideas into technical plans using computer aided design/modeling (CAD/CAM) software, carrying out surveys of mechanical systems an d equipment to see if they're working properly, doing research and assessing new products, innovations and achieving higher efficiency and producing other technical documents for projects, overseeing maintenance programs and quality control, and solving noncompliance during manufacturing procedures.

Havaran Pouyesh Co. Tehran, Iran

Project Manager *Sep '14 – May '15*

Responsibilities: Supervision on pre-installation procedure of plants and placing them, master at Carrier Software for making drawings of ducts and placing chillers and condensers, presenting design plans and data to managers and clients, and choosing an appropriate system of heating and cooling.

Ilia Co. Tehran, Iran

Data Analyst *May '12 – Sep '14*

Responsibilities: Interpreting data, analyzing results using statistical techniques. Developing and implementing data analyses, data collection systems and other strategies that optimize statistical efficiency and quality. Acquiring data from primary or secondary data sources and maintaining databases.

Achievements

Awards

Weber and Mariano Graduate Scholarship in Biomedical Engineering – $5,000 *2019*

Parya Trillium Foundation Scholarship – $1,500 *2019*

Barbara and Frank Milligan Graduate Fellowship – $5,500 *2018*

Mechanical Engineering Department Fellowship University of Toronto – $25,000/Year *2018-2020*

3rd GPA among 50 MASc Students of Aerospace Department of Sharif University of Technology *2017*

11th in Iranian Nation-wide Entrance Exam for Graduate Studies among 10,000 Participants *2015*

Tuition Waiver of Graduate Studies for the First 30 Applicants of Nation-wide Entrance Exam *2015*

5th GPA among 75 Bachelor Students of Mechanical Department of Sharif University *2014*

Publications

Taeibi-Rahni, M., and Mardani, R., (Submitted) Computational Fluid Dynamics Simulation of Vibrations Caused by Droplet Detachment, Journal of Fluid Mechanics (Submitted).

Fluid behaviour in low speeds can be more complex than high speed flows. In some cases, this complex behaviour will lead to vibrations. In this research paper, different vibration modes which can appear are investigated. Moreover, an optimum physical property of fluid for having minimum vibrations are proposed. These vibrations can be harmful during inkjet printing because they will produce satellites which can decrease the quality of printing.

Ebrahimi, A., and Mardani, R. (2018) Tip-Vortex Noise Reduction of a Wind Turbine Using a Winglet, Journal of Energy Engineering, 144(1): p. 04017076, DOI: 10.1061/(ASCE)EY.1943-7897.0000517.

This paper investigated the feasibility of optimizing winglet geometry as a novel approach to reduce aero-acoustic noise of wind turbine blades. The aero-acoustic simulations are performed for different wind speeds and distances from the base of the tower and an optimized winglet geometry for achieving this goal is proposed.

Mardani, R. and Zare, M. (2016) Feasibility Study on Wave Energy in Chabahar, 24th International Conference of Iranian Society of Mechanical Engineers, 2014-482.

This conference paper presented a feasibility study on exploiting wave energy in Chabahar and provides an optimal method for locating wave energy transducers.

Moghadam, M.M., Mardani, R., and Daryanavard, M. (2013) Simple modeling of approximate turning characteristics of tracked mobile vehicles in steady state condition, First RSI/ISM International Conference on Robotics and Mechatronics, DOI: 10.1109/ICRoM.2013.6510091.

This conference paper presented a novel mathematical model which is developed to describe the physics of tracked vehicles. Besides, the equations of motion are solved for radius of rotation in steady state condition using a numerical method. This research was awarded the best paper of the conference.

Certificates

SQL for Data Science *2019*

Python for Data Science by IBM *2018*

Fluid Mechanics Simulation in OpenFOAM by Sharif University of Technology *2016*

Fluid Mechanics Simulation in ANSYS Fluent by Sharif University of Technology *2015*

Fundamentals of Project Management by University of Tehran *2014*

Skills

Technical Skills: Extensive knowledge of Linux, Python, SQL, Matlab, C++, Fortran and could use Python packages including Tensorflow, Numpy, pandas, Sciki-learn, Keras and so on fluently.
Outstanding in mechanics theories, especially LBM and CFD. Experienced in FLUENT, OpenFOAM, ANSYS, Comsol, SolidWorks, and Office.

Soft Skills: Leadership, effective communication, team work, time management, and flexibility.

Hobbies and Interests

Programming, keeping up with the latest developments in technology, volunteering in the community, playing team sports (Soccer, volleyball), camping and traveling, spending time with family and friends, watching movies, and listening to music.