



Rozhin Derakhshandeh

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Department of Mechanical Engineering

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Education

2019-present

Direct PhD

Mechanical Engineering, Department of Mechanical Engineering, Purdue University, West Lafayette, Indiana, USA

Cumulative GPA: 3.85/4

2014-2018

Bachelor of Science

Mechanical Engineering, Department of Mechanical Engineering, University of Tehran, Tehran, Iran

Cumulative GPA: 3.8/4

Undergraduate Thesis: Design and implementation of a laboratory device for studying slip length in superhydrophobic Surfaces

Objectives

I'm a PhD student at Purdue University with a demonstrated history of research and working in the higher education industry. Skilled in fluid Mechanics, experimental fluid dynamics, biofluid dynamics, Particle Image Velocimetry, image processing, and clinical imaging. Strongly motivated to make a difference, challenge new problems, and develop the next generation of technologies.

Field of Interests

- ✓ Fluid Dynamics
- ✓ Cardiovascular Hemodynamics
- ✓ Experimental Mechanics

Skills

- ✓ Experimental Fluid Dynamics
- ✓ Particle Image Velocimetry (PIV)
- ✓ Uncertainty Quantification
- ✓ Digital Imaging and signal processing
- ✓ Ultrasound imaging
- ✓ Statistics

Work Experience

Aug 2019-Present

<http://vlachosresearch.org>

Research Assistant at The Vlachos Research Group

- ✓ flow dynamics analysis in cardiovascular systems using particle image velocimetry (PIV) and ultrasound imaging.
- ✓ Development of uncertainty quantification methods for ultrasound PIV measurements.
- ✓ Development of uncertainty quantification methods for 3D PIV measurements.

Jun 2017- Aug 2019

<http://me.ut.ac.ir/sne>

Research Assistant at Surface Nano Engineering research center (SNE)

- ✓ Design a setup to measure the slip length in superhydrophobic surfaces (which their slip lengths vary from 20µm to 400 µm) through the pressure drop in the pipes-undergraduate thesis, under the supervision of Dr. Chin.
- ✓ Develop two national standards related to the characterization and the durability of the superhydrophobic surfaces in Iranian National Standardization Organization
- ✓ Be a member of the designing and manufacturing of an environmental chamber and Ice Adhesion Test setup.

Jun 2016- Jan 2018 http://pgsc.ut.ac.ir	Research Assistant at Persian Gazelle Solar Car research center (PGSC) <ul style="list-style-type: none"> ✓ Be a member of the aerodynamic team (studying and analyzing an optimize aerodynamic design for the car with ANSYS Fluent) ✓ Participate in the manufacturing of the Persian gazelle 4 solar car ✓ Be a member of the documentation team (content producing for the website, catalogs, brochures, and posters)
Jul 2017- Oct 2017	Intern at Turbine Engineering and Manufacturing Company (TUGA) <ul style="list-style-type: none"> ✓ Model, simulate and analyze the flow through the Mansonelian VPR2 pressure valve at the inlet of the lubricant system, to design a suitable orifice for this valve in MGT-40 turbine. ✓ Do exergy analysis for MGT-40 turbine. ✓ Become familiar with the Turbine manufacturing process.
Jul 2016- Sep 2016	Intern at Arkan Sanat Paydar (ASP) <ul style="list-style-type: none"> ✓ Learn how to design pressure vessels with both ASME standard section VIII and PVellite ✓ Become familiar with hydraulic and pneumatic systems <p>Become familiar with the manufacturing process like milling, rolling, machining, etc.</p> <ul style="list-style-type: none"> ✓ Learn how to design pressure vessels with both ASME standard section VIII and PVellite ✓ Become familiar with hydraulic and pneumatic systems ✓ Become familiar with the manufacturing process like milling, rolling, machining, etc.
Oct 2016- Sep 2018	Employee at Arkan Sanat Paydar (ASP) <ul style="list-style-type: none"> ✓ Prepare 3D and 2D drawings for Industrial projects ✓ Design pressure vessels <p>Prepare documents like Final Book, MTO, and documents required for auctions</p> <ul style="list-style-type: none"> ✓ Prepare 3D and 2D drawings for Industrial projects ✓ Design pressure vessels ✓ Prepare documents like Final Book, MTO, and documents required for auctions

Teaching Experience

Fall 2018	Heat Transfer, Teaching Assistant, Dr. Ashjaee (Lecturing, Solving extra problems, Designing quizzes and homework, Grading)
Fall 2018	Thermodynamics, Teaching Assistant, Dr. Saffaripour (Lecturing, Solving extra problems, Grading)
Fall 2018	Fluid Mechanics Lab, Teaching Assistant, Dr. Chini (Operator of Pressure Drop in Straight Pipe experiment)
Summer 2015	Introduction to Aerospace for high school students, Teacher, Salam e Sabz high school (Lecturing, building the model of different types of gliders with balsa wood)
2014-2016	Private Tutor, Mathematics and Physics Courses for High School Students (Lecturing, Solving problems, Designing exams)

Honors& Awards

2018	✓ Exempted from the entrance examination and tuition to pursue graduate studies at the University of Tehran (In recognition of the excellent academic performance)
2018	✓ Top 10 percent among 135 mechanical students in ME department, University of Tehran
2018	✓ Nominated for the best final thesis in the Exhibition of Applied Theses, University of Tehran
2018	✓ Tehran University and Ghalamchi Scientific-Education Foundation scholarships as a recognition awarded to the highest scoring students of each academic year of BSc
2014	✓ Ranked 228th among more than 250000 participants in The Nationwide Entrance Exam for Undergraduate Program
2007-2014	✓ Attended Farzanegan I Guidance school and high school, part of NODET school chains, NODET stands for National Organization for Developed and Exceptional Talents.

Relevant Courses

Heat Transfer
Thermodynamics
Fluid Mechanics

CFD
Turbomachinery
Optimization

Computer Skills

- Mechanical Engineering** ✓ Professional at: ANSYS (Fluent, Gambit, ICEM), COMSOL, SolidWorks, AutoCAD, EES
✓ Familiar with: CFTurbo, TurbnPro, Qblade, PVElite
- Programming Language** ✓ Professional at: MATLAB, Python, C++
- General Software** ✓ Professional at: Adobe Photoshop, Microsoft Office, Latex, Visio, Webplus

Extra-Curricular Activities

- 2015-2016 ✓ Member of a Scientific Association of Mechanical Engineering (SAME)
- 2015-2016 ✓ Foundation and guidance of a charity group named Hamian e Khorshid with more than a hundred members from university students
- 2018 ✓ Official Member of the Graduation Ceremony Executive Committee for the Class of 2014

Hobbies

Yoga, Badminton, Swimming, Running, Reading Books, Movies, Music