

Sepehr Ghadami

Date of Birth: August, 10, 1990

Gender: Male

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EDUCATION

PhD, Mechanical engineering

University of Waterloo, Waterloo, Ontario, Canada (2018-Present)

Thesis: developing a droplet microfluidic chip for producing monodispersed polymersomes for targeted metal sensing and remediation

Supervisor: Prof. Carolyn Ren

Master of Science, Mechanical engineering

Sharif University of Technology, Tehran, Iran. (2014-2017)

Total Cumulative GPA: 3.92/4

Thesis: Size based particle separation using spiral micro-channels with rectangular and stair like cross-sections: Numerical modeling, design, and fabrication

Supervisor: Prof. Mohammad said Saidi

Bachelor of Science, Mechanical Engineering

University of Tehran (UT), Tehran, Iran. (2008-2013)

Total Cumulative GPA: 3.32/4

Thesis: Numerical simulation and analysis of the effect of non-Newtonian and Newtonian fluids on Von karman pump operation

Supervisor: Prof. Sadeghi

RESEARCH INTERESTS

- Microfluidics
- Computational Fluid Dynamics
- Multiphase flows
- Lab-on-a-chip
- Droplet generation
- Non-Newtonian Fluid

RESEARCH EXPERIENCE

University of Waterloo

2018-present

Graduate Research Assistant, Waterloo Microfluidics LAB, Supervisor: Prof. Carolyn Ren

Sharif University of Technology

2014-2017

Graduate Research Assistant, Bio fluid LAB, Supervisor: Prof. Mohammad said Saidi

- Studying and modeling fluid flow at microscale with increasing applications in lab-on-a-chip devices
- Calculating forces exerted on a particle in the micro-channel using COMSOL with MATLAB
- Modeling particles' trajectories in spiral micro-channels with the potential application of particles and cells separation
- Developing an Image Processing code for studying the fluid flow in micro-channels

Graduate Research Assistant, Bio-MEMS LAB , Supervisor: Prof. Mohammad said Saidi

- Using soft lithography and photo lithography methods for microfluidic chips fabrication.
- Staining cancer and red blood cells with DAPI staining solution
- High-speed fluorescence imaging for particle tracing

University of Tehran

2008-2013

Undergraduate Research Assistant, Supervisor: Prof. Abrinia and Prof. Asaeie

Designing and building a Hybrid Vehicle, “Hybauto”, for Iranian Machine Design Competition, Sharif University of Technology

PUBLICATIONS

S. Ghadami, R.Kowsari, M.S. Saidi, K. Firoozbakhsh “Spiral micro-channels with rectangular and stair like cross-sections for size based particle separation”, Microfluidics and Nanofluidics Journal, Published. (<https://link.springer.com/article/10.1007%2Fs10404-017-1950-3>)

TEACHING EXPERIENCE

Sharif university of technology

2014-2017

- Computational fluid dynamics(CFD)
- Micro and Nano flows

University of Tehran

2008-2013

- Engineering Mathematics

HONORS AND AWARDS

Awarded Graduate Research Scholarship from University of Waterloo for PhD Program, 2018-Present.

Ranked 63th among more than 17000 participants in the nationwide university entrance examination for Graduate Program, 2014.

Awarded Full Scholarship from Sharif University of Technology for Graduate Program, 2014-2017.

Ranked 534th among more than 400000 participants in the nationwide university entrance examination for Undergraduate Program, 2008.

SELECTED ACADEMIC COURSES

Sharif University of Technology

- Computational Fluid Dynamics (CFD), Prof.Saidi
- Applied electronics, Narimani
- Advanced engineering mathematics, Prof. Hesaraki
- Micro and nano flows, Prof. Saidi
- Aerosol particle transport and deposition, Prof. Saidi
- Bio fluids, Prof. Firoozabadi and Pro. Saidi
- Applied electronics lab, Narimani
- Bio instrument, Narimani

University of Tehran

- Optimization, Prof. Masoud Shariatpanahi
- Numerical method
- Gas Turbine, Prof. Mehrdad Raisi

SELECTED ACADEMIC PROJECTS

Sharif university of technology

- Molecular dynamics modeling of water passing through nanoporous graphene membranes, Course: Micro and nano flows , Prof.Saidi , Spring 2015
- Molecular dynamics modeling of water passing through carbon nanotube, Course: Micro and nano flows , Prof.Saidi , Spring 2015
- Pressure Measurement in Fluids and Gases using PPIV (Pressure Particle Image Velocimetry). Supervisor: Prof. M.B. Shafii, Spring 2016

- Determining the Velocity of Free Convection, Fluid Jet and Mixer using PIV (Particle Image Velocimetry). Supervisor: Prof. M.B. Shafii, Spring 2016
- Determining the Temperature and Concentration of a Fluid Jet using LIF (Laser Induced Fluorescence). Supervisor: Prof. M.B. Shafii, Spring 2016
- Analysis of entropy generation due to natural convection in square enclosures with multiple discrete heat sources. coding with C++.

University of Tehran

- Solution of vorticity-stream function equations in a lid-driven cavity using SOR solver coding with C++ (Finite Difference Method), Course: CFD, Prof. V. Esfahanian, Spring 2011
- Modified Multi Objective Particle Swarm Optimization (MOPSO) code, Coding in MATLAB, Course: Optimization, Prof. M. Shariatpanahi, Spring 2011
- Explicit solution of Navier-stokes and continuity equations in a lid-driven cavity in staggered grid, SIMPLE Method(Finite Difference Method)coding with C++ , Course: CFD, Prof. V. Esfahanian, Spring 2011
- Temperature and heat transfer analysis of a circular fin in Unsteady State, Coding in MATLAB, Course: Heat Transfer 1, Prof. F. Kowsari, Spring 2011
- Complex method optimization code, Coding in MATLAB, Course: Optimization, Prof. M. Shariatpanahi, Spring 2011

COMPUTER SKILLS

Programming:

- C++, MATLAB, Mathematica

Mechanical Engineering Software:

- COMSOL, ANSYS, FLUENT, SOLIDWORKS, Tecplot, VMD, AutoCAD

REFERENCES

Prof. Mohammad said Saidi

Professor, Mechanical Engineering
 Department of Mechanical Engineering
 Sharif university of technology
 Alma Mater: Massachusetts institute of
 technology(MIT)
 Email: mssaidi@sharif.edu

Prof. Carolyn Ren

Professor, Mechanical Engineering
 Department of Mechanical Engineering
 University of Waterloo
 Alma Mater: University of Toronto
 Email: c3ren@uwaterloo.ca

Prof. Behshad Shafiee

Professor, Mechanical Engineering
Department of Mechanical Engineering
Sharif University of Technology
Alma Mater: Michigan State University
Email: Behshad@sharif.edu

Prof. Kayvan Sadeghy

Professor, Mechanical Engineering
Department of Mechanical Engineering
University of Tehran
Alma Mater: University of Toronto
Email: sadeghy@ut.ac.ir