

BEHRANG ASGHARIAN, Ph.D., P.E.

SCHOLARLY ASSOCIATE PROFESSOR, WSU

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Thermal/Mechanical Engineer with a passion for high quality engineering design across complex thermal and fluid systems. Subject matter expert (SME) with **10+** years of experience teaching Fluid Mechanics, Heat Transfer, Thermodynamics covering Pumps, Fans, Compressors, Heat Pumps, Heat Exchangers, HVAC, Piping, Computational Fluid Dynamics (CFD), Experimentation, and Instrumentation. Delivers cutting edge, flexible solutions and strategies that streamline learning and foster an innovation-centric environment. Offers charismatic leadership and management experience, prioritizing accountability through creative problem solving, reliable work ethic, and powerful interpersonal communication skills.

CORE COMPETENCIES

- System Requirements & Product Specification
- Project Management
- Engineering Training & Training Delivery
- Root Cause Analysis
- Design Evaluation & Design Review
- Cloud Computing & Engineering Documentation
- Hardware Testing
- Customer Training & Customer Support
- Test Planning
- Design Direction & Design Oversight

EDUCATION

DOCTOR OF PHILOSOPHY (Ph.D.), Mechanical Engineering
Washington State University

2013
Pullman, WA

MASTER OF ENGINEERING (M.E.), Mechanical Engineering
Tarbiat Modares University

2007
Tehran, Iran

BACHELOR OF SCIENCE (B.S.), Mechanical Engineering
Amirkabir University of Technology

2003
Tehran, Iran

PROFESSIONAL EXPERIENCE

SCHOLARLY ASSOCIATE PROFESSOR | THERMOFLUIDS LAB MANAGER
Washington State University

January 2020 - Present
Bremerton, WA

- Launch American Society of Mechanical Engineers (ASME) chapter, assembling and achieving buy-in from **15-** member founding student panel, leading officer elections and creating fundraising platform.
- Teach **5** or **6** courses annually, including **2** lab classes covering mechanical engineering, mechatronics, manufacturing, and statistics, consistently achieving **95%** or higher positive student ratings.
- Increase understanding of Engineering Equation Solver (EES) and other complex thermal system design tools, harnessing expertise within thermodynamics and transport property databases, plotting, and analysis.
- Enhance learning opportunities for **60+** students per semester, focusing on preparing graduating cohorts for seamless transition into professional development opportunities by providing career management coaching.

CLINICAL ASSISTANT PROFESSOR | THERMOFLUIDS LAB MANAGER **August 2013 - January 2020**

- Prepared the documentation necessary for Bremerton program to be accredited by **ABET** in 2013 & 2019.
- Created organizational plan and binders for **15** labs, providing an optimal learning environment for students and visitors by highlighting safety procedures, engineering ethics, specifications, and instrumentation.
- Led purchasing, collaborating with lab engineer to perform calculations and strategize design direction and budget for equipment including pressure transducers, thermocouples, torque sensors, data acquisition systems, and flowmeters.
- Introduced weekly meetings with senior lab groups, reviewing reports prior to monthly submission deadlines to mentor on technical writing, resulting in consistent high quality student engineering reports.
- Improved student performance in PowerPoint presentations and public speaking, coaching on public speaking, hosting peer critique sessions, and preparing emerging engineers for professional success.
- Facilitated industry-specific guest speaking engagements, cultivating relationships and planning a robust professional lecturer schedule based on current innovation and industry trends.

ADJUNCT PROFESSOR

July 2013

- Set up lab environment at new Mechanical Engineering program location in collaboration with senior professor, testing equipment, collecting data, performing calculations, and designing experiments for **7** graduating student cohorts.

- Accumulated invaluable knowledge from mentor on lab organization and techniques while teaching **20+** students over **3** weeks, successfully covering semester lab course over summer session, with overwhelmingly positive feedback.

PhD STUDENT | RESEARCH ASSISTANT | TEACHING ASSISTANT

September 2009 - May 2013

- Presented dissertation focused on thermoacoustic engine and refrigerator efficiency, testing, developing simplified numerical thermodynamic modeling, and compiling results for publication in academic journals.
- Taught **60+** students per class in upper division engineering courses, delivering lectures, grading projects and tests, and otherwise supporting professors.
- Led **3**-hour lab sessions **3** times weekly during summer sessions, facilitating learning for **70+** students per lab, developing grading rubrics and grading lab reports.

ENGLISH TEACHER

APADANA

September 2008 - August 2009

Karaj, Iran

- Taught intermediate and advanced level English language courses, supporting students pursuing international graduate degrees by mentoring on advanced TOEFL - IBT strategies.

FACULTY LECTURER

Persian Gulf University

January 2008 - July 2009

Bushehr, Iran

- Compiled lesson plans, lectures, and grading for gas dynamics, fluid mechanics, system engineering, and internal combustion engine course materials.

MECHANICAL ENGINEER - PIPING DISCIPLINE

FARAB

September 2005 - July 2007

Tehran, Iran

- Led piping development for **\$50M** gas compressor station project, improving pressure in aging system by performing stress analysis and selecting optimal pipe materials and pipe dimensions.
- Collaborated with electrical, civil, instrumentation, and process engineers to efficiently meet project timelines and generate project documents and specifications.

COURSES OFFERED

ME 405, Thermal Systems Design, WSU

2015- 2020

- Topics: Introduction to EES (Engineering Equation Solver), Thermodynamic Laws, Power Cycles, Process Cycles, Exergy Analysis, HVAC and Psychrometric Chart, Fluid Transport Systems, Pumps, Heat Exchangers
- Project: Design, Exergy Analysis and Optimization of a Power Plant Rankine Cycle with Reheat & Regeneration

ME 406, Experimental Design, WSU

2014-2021

- Topics: Designing Experiments, Effective Professional Presentation/Public Speaking Skills, and Technical Report Writing
- Labs: Axial Fan, Centrifugal Fan, Air Compressor, Duct Heater, Water Pump, Heat Pump, Double Pipe Heat Exchanger, Cross Flow Heat Exchanger, Shell and Tube Heat Exchanger, HVAC Unit, Air Blower

ME 401, Mechatronics, WSU

Fall 2013

- Topics: AC Circuits, DC & AC Motors/Generators, Hydraulic Circuits, PLC...

ME 303, Fluid Mechanics, WSU

2016-2021

- Topics: Fluid Properties, Fluid Statics, Fluid Kinematics & Reynolds Transport Theorem, Bernoulli and Energy Equations, Momentum Equations, Turbulent and Laminar Flows, Internal and External Flows, Navier Stokes Equations, Lift & Drag...

ME 304, Heat Transfer, WSU

2018-2021

- Topics: First Law of Thermodynamics, Conduction, Convection, Radiation, Steady and Unsteady Heat Transfer for different geometries, Fins, External and Internal Flow Heat Transfer, Heat Exchangers

ME 306, Thermofluids Laboratory, WSU

2013-2021

- Topics: Fourier Series & FFT, Data Presentation, Dynamic Behavior of Measurement Systems, Data Acquisition Systems, Calibration, Uncertainty Analysis, Pressure Measurement Systems, Flow Measurement Systems, Thermocouples, Electronic Instruments, Signal Conditioning, Rotational Speed Measurements

ME 313, Finite Element Analysis, WSU

2013-2018

- Topics: Matrix Manipulation, Spring Systems, Truss Systems, 1D, 2D, and 3D Beams, Conduction Heat Transfer, MATLAB

ME 310, Manufacturing Processes, WSU

2014-2015

- Topics: Casting, Forging, Rolling, Extrusion, Drawing, Welding, Powder Metallurgy...

- Topics: Statistical Terminology, Presenting Data, Probability and Probability Density Functions, z and t distributions, Hypothesis testing (z test and t test), Comparing Populations, F test, Regression, Statistical Process Control...

PUBLICATIONS

Book: Asgharian, B., “Numerical Modeling of Thermoacoustic Heat Pumps and Engines”, LAMBERT Academic Publishing (March 2014), ISBN-13: 978-3659523717

Paper: Asgharian, B. and Matveev, K., “Influence of Finite Heat Capacity of Solid Pins and Their Spacing on Thermoacoustic Performance of Transverse-pin Stacks”, Applied Thermal Engineering, Vol. 62, No. 2, pp. 593-598 (2014)

Paper: Asgharian, B. and Matveev, K., “Numerical Modeling of Thermoacoustic No-Stack Heat Pumps and Prime Movers”, Engineering Applications of Computational Fluid Mechanics, Vol. 6, No. 3, pp. 346-355 (2012)

Book: Asgharian, B., Javadi, S. and Darvishi, M., “A Comprehensive Guide to CAESAR II”, AFRANG Publications, Tehran, Iran (2009), ISBN-13: 978-6005060157

HONORS/AWARDS

Nominee, Excellence in Online Teaching, WSU

2019 | 2020

Award, GPSA Teaching Assistant Excellence, WSU

2012

Nominee, Mechanical Engineering Department Outstanding TA, WSU

2012

CERTIFICATIONS & TRAINING

PROFESSIONAL ENGINEER #20100337 THERMOFLUIDS, Washington State

2020

EFFECTIVE TEACHING WORKSHOP, Richard Felder & Rebecca Brent

2015

THE GRANT WRITING WORKSHOP | GRADUATE TEACHING WORKSHOPS, WSU

2010 - 2013

LEADERSHIP

FOUNDER | LEADER, FARAB HIKING GROUP, highest Iranian peaks, Mt. Damavand (5610m, 18,406ft) 2006

LEADER, MECHANICAL ENGINEERING DEPARTMENT HIKING GROUP, Amirkabir University of Technology 2000 - 2003

SERVICE

Committee Member, Mechanical Engineering Strategic Planning, WSU

2020

Committee Member, Laboratory Safety, WSU-Bremerton

2017-2020

Committee Member, Undergraduate Studies, WSU

2016-2019

Committee Member, Faculty Search for Mechanical Engineering Department, WSU-Everett

2016

TECHNICAL PROFICIENCIES

ANSYS FLUENT | AUTOCAD | BLACKBOARD | C++ | CAD | CFD | EES | GAMBIT | GOOGLE SUITE | LABVIEW | MAPLE | MATLAB | MICROSOFT OFFICE SUITE | NUMERICAL MODELING | ONENOTE | REFPROP | V+ | ZOOM

NON-TECHNICAL COMPETENCIES

- Excellent Communication Skills
- Honesty & Integrity
- Strong Work Ethic
- Enthusiastic about Fitness (Summited Mt. Rainier, Mt. Adams, Mt. Hood, Mt. Baker and Mt. Saint Helens in Washington & Oregon States)
- Positive Attitude
- Sense of Humor
- Customer Training & Customer Support
- Commitment & Discipline
- Multicultural Experience