Amirhossein Kholghi

FIELDS OF INTEREST

- Thermal Management
- Computational Fluid Dynamics (CFD)
- Multi-phase Flow
- Renewable Energy

CONTACT DETAILS

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LinkedIn: amirhossein-kholghi

PERSONAL INFORMATION

Citizenship: **Iran**

Family: **Single without children**

Age: **27**

Languages:
English (Fluent)
Persian (Native)

SKILLS

- **Research:** Thermal Management Systems, Numerical Analysis, PCM, Nanofluids
- **Programming:** FORTRAN, MATLAB, Python
- **Design and Analysis:** SOLIDWORKS, COMSOL Multiphysics, ANSYS Fluent
- **Other Software:** EES, TECPLOT, ORIGIN
- **Social Skills:** Teamwork, Team Leadership

EDUCATION

PhD in Mechanical Engineering **October 2025–Present**

National Technical University of Athens (NTUA) & National Observatory of Athens (NOA)

◇ Project: *Modelling of Dust Transport Processes. Bridging the gap between theory, modelling and observations*

◇ Marie Skłodowska-Curie Doctoral Fellow, Dust Doctoral Network (Dust-DN)

Master of Science in Mechanical Engineering - Energy Conversion

Ferdowsi University of Mashhad **Sept 2021–Jan 2024**

◇ Thesis: *Numerical Investigation of Liquid Jet Impingement Cooling for Efficient Thermal Management of Electronic Devices*

◇ GPA: 3.88/4 (17.11/20)

Bachelor of Science in Mechanical Engineering

Ferdowsi University of Mashhad **Sept 2016–May 2021**

◇ Thesis: *Modeling coronary arteries using Ansys Fluent (Ideal coronary arteries were simulated with pulsatile blood flow at the inlet)*

◇ GPA: 3.20/4 (15.84/20)

PUBLICATIONS

- **Kholghi, A.**, Zade, F. A., Niazmand, H., & Sardarabadi, M. (2025). Machine learning regression modeling of liquid jet impingement cooling: Based on computational fluid dynamics (CFD). *International Journal of Thermal Sciences*.
- **Amirhossein Kholghi**, Amirhossein Ziaee, Mohammad Mustafa Ghafurian, Hamid Niazmand, "A comparative study of several water-based nanofluids for solar steam generation," The 31st Annual International Conference of Iranian Society of Mechanical Engineers, Iran, 2023.

TESTS

IELTS: Listening: 8, Reading: 7.5, Speaking: 7, Writing: 7 (9/1/2024)
Overall band Score: 7.5

ACADEMIC PROJECTS

Programming Experiences

- A Fortran code was developed for **3-D Stokes flow** over a sphere and solved the energy equation for various Peclet numbers using the **ADI** method.
- A Fortran code was developed for solving **Navier–Stokes equations** using stream–vorticity formulation and ADI for a cavity problem.
- Analysis of 2-D **transient heat transfer** in various geometries using control-volume and ADI approaches; compared temperature distribution and convergence time for three geometries.
- Numerical 3-D simulation of coronary arteries using **ANSYS Fluent** to study pulsatile blood flow.
- Designed and built an RC racing boat using **SolidWorks**, CNC machining, and additive manufacturing.
- Numerical simulation of a three-blade turbomachine with varying hub diameter using **COMSOL Multiphysics**.

HONORS AND AWARDS

- Awarded Marie Skłodowska-Curie Doctoral Fellowship for PhD studies at National Technical University of Athens (NTUA) and National Observatory of Athens (NOA) (2025)
- Awarded Scholarship for University Tuition (Master's degree)
- Ranked Top 3% among over 160,000 participants in the national university entrance exam

References

- **Hamid Niazmand**
  Professor, FUM
  MSc thesis supervisor
  Email: niazmand@um.ac.ir
  Google Scholar

- **Mohammad Sardarabadi**
  Associate Professor, Quchan University
  - MSc thesis advisor
  Email: m.sardarabadi@qiet.ac.ir
  Google Scholar

- **Mohammad Javad Maghrebi**
  Professor, FUM
  Email: mjmaghrebi@um.ac.ir
  Google Scholar

Work Experience

Research Assistant

Thermal Management Laboratory, Ferdowsi University of Mashhad   **2022–2025**

- Participate in various projects related to thermal management and numerical modeling.

Teaching Assistant

Ferdowsi University of Mashhad   **2020–2024**

- **Thermodynamics I:** Provided assignments and projects, instructed practical sessions, assisted with EES.
- **Fluid Mechanics I:** Facilitated discussions and held weekly office hours for 50+ students.
- **Advanced Thermodynamics:** Provided assignments, instructed practical sessions, and graded assignments/quizzes.

Mechanical Engineer Intern

Ferdowsi Combined Cycle Power Plant   **2019**

- Gained familiarity with schematics, mechanical drawings, and PIDs; learned about various valves, pumps, and equipment in a gas power plant.

Courses and Certificates

Selected Courses

- Thermodynamics I (20/20)
- Advanced CFD (18/20)
- Advanced Thermodynamics (19/20)
- Fuel and Combustion (18.5/20)
- Turbomachinery (18/20)
- Design of Machine Elements (17.10/20)
- "**SUMMER SCHOOL ON MATERIALS FOR SMART LATENT THERMAL ENERGY STORAGE LTES 2024**", HSLU, Switzerland

Membership & Volunteer Work

Member of the Scientific Association of Energy, Ferdowsi University of Mashhad (Jan 2019–Dec 2020)