



# Behzad Forouzi Feshalami

Senior Researcher at Wind Tunnel Lab | Ferdowsi University of Mashhad, Ir  
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## RESEARCH INTEREST

- ❖ Experimental Aerodynamics
- ❖ Supersonic Air Intakes
- ❖ Hydropower
- ❖ Unsteady Aerodynamics
- ❖ Heat Transfer

## SKILLS

*Programming language:*

- ❖ Fortran
- ❖ Matlab (GUI)

*Software:*

- ❖ Gambit & Fluent,
- ❖ Solid Works,
- ❖ Office (Word, Excel, Power Point)
- ❖ Tecplot

## EDUCATION

### FH Joanneum | University of Applied Sciences, Feb-Jul 2019, Austria

- Exchange student (Erasmus Scholar), Business in Emerging markets
- Courses: Conflict Resolution and Negotiation, Research Lab, International Corporate Finance and Project Finance, Business in Emerging Markets

### Ferdowsi University of Mashhad, 2015-2018, Iran

- M. Sc. in Aerospace Engineering (Propulsion), Total GPA:3.60/4
- Thesis title: Experimental investigation of flapping mechanism of the Black-headed gull in forward flight
- Supervisor: [Prof. M. H. Djavarehshkian](#)

### Guilan University, 2009-2013, Iran

- B. Sc. in Mechanical Engineering (Fluid Mechanic), GPA:3.04/4 (Last two years)
- Thesis title: Studying, modeling and optimization of performance parameters of hydropower stations
- Supervisor: [Prof. Javad Mahmoudimehr](#)

## AWARDS

- Awarded a scholarship of European Union (ERASMUS+) as an exchange student in FH JOANNEUM, Austria (February-July 2019)
- Awarded a scholarship of Iran National Elites Foundation for Ph.D. in Ferdowsi University of Mashhad (2018)
- Ranked among the top 1% of 23,000 students of Ferdowsi University of Mashhad (2017)
- Ranked 1<sup>st</sup> in M. Sc. among the students in the field of propulsion who enrolled in 2015

## PROFESSIONAL ACTIVITY

### Peer Review

- [Proceedings of the IMECHE, Part G: Journal of Aerospace Engineering](#) (ISI Journal, Impact Factor=1)
- [Proceedings of the IMECHE, Part I: Journal of Systems and Control Engineering](#) (ISI Journal, Impact Factor=0.99)

### Post-graduate Students Research Mentor (Ferdowsi University of Mashhad)

- Mostafa Araste (MSc Student)
- Mostafa Mohammadi (MSc Student)
- Yousef Sayegh (MSc Student)
- Yegane Azargoun (PhD Student)

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## PUBLICATIONS

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### Peer-reviewed Articles

- J Mahmoudimehr, A Sorouri, **BF Feshalami** (2016) "[A novel map for deciding on the type of a hydro power plant](#)", *Proceedings of the Institution of Civil Engineers-Energy*, vol. 169 (4), pp. 161-178
- A Samiee, MH Djavareshkian, **BF Feshalami**, E Esmailifar (2017) "[Improvement of Airfoils Aerodynamic Efficiency by Thermal Camber Phenomenon at Low Reynolds Number](#)", *Journal of Aerospace Technology and Management (published online)*
- E Esmailifar, MH Djavareshkian, **BF Feshalami**, A Esmaili (2017) "[Hydrodynamic simulation of an oscillating hydrofoil near free surface in critical unsteady parameter](#)", *Ocean Engineering*, vol. 141, pp. 227-236
- K Jafari, MH Djavareshkian, **BF Feshalami** (2017) "[The Effects of Different Roughness Configurations on Aerodynamic Performance of Wind Turbine Airfoil and Blade](#)", *International Journal of Renewable Energy Development*, vol. 6 (3), pp. 273-281
- **BF Feshalami** (2018) "[Optimal Operating Scenario for Polerood Hydropower Station to Maximize Peak Shaving and Produced Profit](#)", *International Journal of Renewable Energy Development*, vol. 7 (3), pp. 233-239
- **BF Feshalami**, MH Djavareshkian, AA Zaree, M Yousefi, AA Mehraban (2018) "[The Role of Wing Bending Deflection in the Aerodynamics of Flapping Micro Aerial Vehicles in Hovering Flight](#)", *Proceedings of the IMECHE, Part G: Journal of Aerospace Engineering (published online)*
- JA Esfahani, **BF Feshalami** (2018) "[Theoretical Study of Nanofluids Behavior at Critical Rayleigh Numbers](#)", *Journal of Thermal Analysis and Calorimetry*, vol. 135 (6), pp. 3499-3518
- J Sepahi-Younsi, **BF Feshalami**, SR Maadi, MR Soltani (2018) "[Boundary Layer Suction for High-speed Air Intakes: A Review](#)", *Proceedings of the IMECHE, Part G: Journal of Aerospace Engineering (published online)*
- **BF Feshalami**, MH Djavareshkian, M Yousefi, AA Zaree, AA Mehraban (2018) "[Experimental Investigation of Flapping Mechanism of the Black-headed Gull in Forward Flight](#)", *Proceedings of the IMECHE, Part G: Journal of Aerospace Engineering (published online)*
- M Honarmand, MH Djavareshkian, **BF Feshalami** (2019) "Numerical Simulation of a Pitching Airfoil Under Dynamic Stall of Low Reynolds Number Flow", *Journal of Aerospace Technology and Management (Accepted)*
- J Sepahi-Younsi, **BF Feshalami** (2019) "Performance Evaluation of External and Mixed Compression Supersonic Air Intakes: A Parametric Study", *Journal of Aerospace Engineering (Accepted)*
- AA Mehraban, MH Djavareshkian, Y Sayegh, **BF Feshalami**, Y Azargoon, AH Zaree, M Hassanalian (2019) "Effects of smart flap on aerodynamic performance of Sinusoidal leading-edge wings at low Reynolds numbers", *Meccanica (Under Review)*

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## Conference Presentations

- J Sepahi-Younsi, S Esmaeili, **BF Feshalami**, M Hassanalian "Improving the Performance of an External Compression Intake by the Boundary Layer Suction" *AIAA Conference* (Under Review)
- **BF Feshalami**, J Mahmoudimehr "The optimum power generation of polerud dam by dynamic programming algorithm", *The 22nd annual international conference on mechanical engineering(ISME 2014)(In Farsi)*
- J Sepahi-Younsi, **B Forouzi Feshalami** (2017) "[Investigation of Corner Rounding Effects on the Performance of a Supersonic Air Intake](#)", *The 16th International Conference of Iranian Aerospace Society-Iran*
- **BF Feshalami**, MH Djavareshkian "[Wind tunnel tests for Assessment of wing flexibility effects on the aerodynamics of flapping micro aerial vehicle](#)", *26th Annual International Conference of Iranian Society of Mechanical Engineers(ISME2018)*
- **BF Feshalami**, MH Djavareshkian "[Experimental simulation of flapping wings of the black-headed gull in hovering flight](#)", *26th Annual International Conference of Iranian Society of Mechanical Engineers(ISME2018)*

## RESEARCH EXPERIENCE

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### Flapping Micro Aerial Vehicle (M.Sc. Thesis) (2017-present)

- Designed a new flapping mechanism, inspired by the black-headed gull which deflects its wings during upstroke to reduce the unfavorable impacts of negative lift, in Solid Works;
- Used a 3-D printer to print the joints;
- Assembled the printed joints by hand in the MAV Lab;
- Constructed three wings with different flexibilities;
- Conducted the experiments in the wind tunnel to reveal the role of wing bending deflection angle in the aerodynamics of FMAVs in forward and hover flights;
- Published two papers in *IMECHE, Part G journal*.
- Presented two oral presentations at the 26th annual international conference on mechanical engineering (ISME2018), Semnan, Iran;
- Currently writing two journal papers in this field.

### Renewable energy (B.Sc. Thesis) (2014-2016)

- Produced a dynamic programming code in MATLAB to optimize the performance of a hydroelectric dam from energy and annual revenue points of view;
- Provided a novel map for deciding on the type of a hydro power plant based on natural inflow rate and electricity price variability;
- Compared a simple hydro power plant and a pump-assisted one in terms of different economic criteria including annual benefit from electricity sales, net present value, benefit–cost ratio, payback time and internal rate of return;
- Published two papers; one paper in Proceedings of the *Institution of Civil Engineers-Energy*

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and the other one in *International Journal of Renewable Energy Development*;

- Presented an oral presentation at the 22nd annual international conference on mechanical engineering (ISME 2014), Ahvaz, Iran;

### **Supersonic air intake (2016-2017)**

- Meshed supersonic air intakes in Gambit software;
- Investigated the effects of different flow and geometric parameters on performance of mixed compression and external compression intakes in Fluent software;
- Submitted two papers in ISI journals (one was revised in *Journal of Aerospace Engineering* and the other one is under review in journal of *propulsion and power research*).
- Reviewed available papers in the literature about boundary layer suction for high-speed air intakes and published results in *Imeché, Part G* journal;
- Presented an oral presentation at the 16th International Conference of Iranian Aerospace Society, Tehran, Iran;

### **Nanofluid (2017-present)**

- Derived new theoretical correlations to compute heat transfer parameters of Nanofluids;
- Validated the accuracy of derived theoretical correlations against available numerical and experimental papers in the literature;
- Published results in the journal of *Thermal Analysis and Calorimetry*;

## **LANGUAGE**

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**Farsi:** Native

**English:** IELTS Overall score: 6.5 (October 20, 2018)

## **SELECTED MASTER COURSES**

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Advanced Fuel & Combustion: 20/20

Computational methods in Fluid Dynamics: 17.5/20

Supersonic Aerodynamic: 18.86/20

Intake Aerodynamic: 17.47/20

Advanced Numerical Methods: 17.5/20

Advanced Mathematics-1: 18.25/20

Aerothermodynamic of Rocket Engines: 17.5/20

Seminar and Research Methodology: 19.9/20

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## TEACHING EXPERIENCE

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### Ferdowsi University of Mashhad (2018)

- Teaching assistant for “*Advanced Fuel & Combustion*”
- Held a workshop on “*Introduction to Aerodynamic Design of Aircraft*”

### Guilan University (2017)

- Held a workshop about “*Research Methodology*”

## REFERENCES

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- [Dr. M. H. Djavareshkian](#)  
Professor  
Mechanical Engineering Department,  
Ferdowsi University of Mashhad, Iran  
✉ [Javareshkian@um.ac.ir](mailto:Javareshkian@um.ac.ir)
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