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Mehdi Nazarinia

Personal Details

- Occupations: Aerospace Engineer / Postgraduate (PhD) Student
- Date of Birth: 19-May-1977
- Place of Birth: Shiraz - IRAN
- Birth Certificate No.: 397
- Nationality: Iranian
- Marital Status: Single
- Gender: Male
- Home page: http://alum.sharif.edu/~nazariniam

Education

06/2005 – Present — MONASH University, Melbourne, Australia

Postgraduate (PhD) Student of Mechanical Engineering, fluid mechanics

09/2000 - 03/2003 — SHARIF University of Technology, Tehran, IRAN

Master of Science in Aerospace Engineering, Aerodynamics

GPA: 16/20

- Key courses: Subsonic Aerodynamic, Flight Test Principals, Turbulence, CFD, Advance Flight Dynamic, Advance Automatic Control, Supersonic Aerodynamic, and Viscous Flow.

09/1995 - 02/2000 — SHARIF University of Technology, Tehran, IRAN

Bachelor of Science in Mechanical Engineering, Sub. : Aerospace

GPA: 14.13/20

- Key courses: Airplane Design, Advance Airplane Design, Orbital Mechanic, Heat Transfer, Rockets Principals, Propulsion, Structural Design, Structural Analysis, Flight Instrument Lab., Flight Dynamics, Aerodynamics, Material Science, and Strength of Material.

Dissertations

- **M.Sc.**: "Flow Analysis Over and Behind a Wing with Different Winglets", Advisors: Associate Professors Dr. Mohammad Reza Soltani and Dr. Kaveh Ghorbanian.
- **B.Sc.**: "Experimental Investigation of Pressure Distribution behind a Typical Wing with and Without Blended and Spiroid Winglet", Advisor: Associate Professor Dr. Mohammad Reza Soltani.

Honors

- Honored to receive **Monash International Postgraduate Research Scholarship (MIPRS)** award, August 2005.
- Honored to receive **Monash Graduate Scholarship (MGS)** as a postgraduate student for Mechanical Engineering studies in Australia, June 2005.

Technical Skills

- Achieved 137:15 of logged flying hours (Holding PPL license no. 497).

Computer Skills

- Languages: Expertise in FORTRAN, Basic and Pascal.
- Software Applications: MS Office, FLUENT, GAMBIT, Star-CD, Pro*am, Prostar, MATLAB, AutoCAD R14, Missile DATCOM, Digital DATCOM, Mathematica, XFOIL, PROFIL (Eppler), SolidWorks, Motion Planner, LabView, Tecplot and Internet.
- Operating Systems: Windows 95, 98, 2000, XP, and MS-DOS.

Research Interests

- Applied Aerodynamics
- Subsonic (Low Subsonic) Aerodynamics
- Supersonic Aerodynamics
- Flight Test
- Flight Dynamics
- Data Acquisition
- Fluid mechanics

Publications

Journal Papers:

1. Soltani, M.R., **Mehdi Nazarinia**, and Ghorbanian, K., "***Effect of Winglet Shapes on the Flowfield and Wake of a Wing***", Manuscript submitted to Esteghlal Journal of Engineering, Isfahan University of Technology, May 2004 (In Farsi).

2. **Mehdi Nazarinia**, Soltani, M.R., and Ghorbanian, K., "***Experimental Study of Vortex Shapes behind a Wing Equipped with Different Winglets***", Manuscript submitted to Journal of Aerospace Science and Technology (JAST), Iranian Aerospace Society.

3. Mani, M., Naghib-Lahouti, A., and **Mehdi Nazarinia**, ***"Experimental and Numerical Aerodynamic Analysis of A Satellite Launch Vehicle With Strap-on Boosters"***, The Aeronautical Journal, Royal Aeronautical Society, Volume 108, Number 1085, July 2004, pp. 379-387.

Conference Papers:

1. **Mehdi Nazarinia**, Naghib-Lahouti, A., and Tolouei, E., "***Design and Numerical Analysis of Aerospike Nozzles with Different Plug Shapes to Compare their Performance with a Conventional Nozzle***", The Eleventh Australian International Aerospace Congress (AIAC-11), Melbourne Convention Centre, Melbourne, Australia, 13-17 March 2005.

2. Naghib-Lahouti, A., **Mehdi Nazarinia** and Elhaum Tolouei, "***Design and numerical analysis of an aerospike nozzle to compare its performance with a conventional nozzle in optimal and off-design conditions***", The Ninth Iranian National Fluid Dynamics Conference, Shiraz, Iran, 7-9 March 2005 (In Farsi).

3. Naghib-Lahouti, A., **Mehdi Nazarinia** and Elhaum Tolouei, "***Design and CFD Analysis of an Aerospike Nozzle to Compare its Off-design Performance with a Conventional Nozzle",*** IMECE 2004, Kuwait, 5-8, Dec. 2004.

4. Soltani, M.R., Ghorbanian, K. and **Mehdi Nazarinia**, ***"Experimental Investigation of the Effect of Various Winglet Shapes on the Total Pressure Distribution Behind A Wing"***, 24th ICAS Congress, Yokohama, Japan, August 29 - September 3, 2004.

5. Soltani, M.R., Ghorbanian, K. and **Mehdi Nazarinia**, ***"Effect of Different Winglet Shapes on the Wake of a Wing"***, The 2nd International & The 5th National Conference of Iranian Aerospace Society, Aerospace Research Institute (ARI), Iran Aircraft Manufacturing Industries (HESA), February 2004 (In Farsi).

6. Mani, M., Naghib-Lahouti, A. and **Mehdi Nazarinia**, ***"Experimental and Numerical Determination of Longitudinal Aerodynamic Coefficients of a Satellite Launch Vehicle with Strap-on Boosters"***, The 2nd International & The 5th National Conference of Iranian Aerospace Society, Aerospace Research Institute (ARI), Iran Aircraft Manufacturing Industries (HESA), February 2004.

7. Naghib-Lahouti, A., **Mehdi Nazarinia** and Elhaum Tolouei, ***"Comparative Validation of Two Commercial CFD Codes Through Solution of a Number of Benchmark Problems",*** The 2nd International & The 5th National Conference of Iranian Aerospace Society, Aerospace Research Institute (ARI), and Iran Aircraft Manufacturing Industries (HESA), February 2004 (In Farsi).

8. Soltani, M.R., Ghorbanian, K. and **Mehdi Nazarinia**, **"*Flow Analysis Over and Behind a Wing With Different Winglet Shapes*"**, 42nd Aerospace Sciences Meeting & Exhibit, Reno, NV, USA, January 2004, AIAA-2004-0723.

9. Naghib-Lahouti, A., **Mehdi Nazarinia**, and Khadivi, T., ***"Investigation of the Effects of Nose Shape of Strap-on Boosters on Aerodynamic Characteristics of a Launch Vehicle"***, The 4th Conference of Iranian Aerospace Society, Amirkabir University of Technology (Tehran Polytechnic) Aerospace Engineering Department, February 2003 (In Farsi).

10. Soltani, M.R., and **Mehdi Nazarinia**, ***"Experimental Analysis of a Winglet on the Wake of a Typical 3D Wing"***, 10th Annual (International) Mechanical Engineering Conference, Iranian Society of Mechanical Engineers, May 2002 (In Farsi).

Technical Reports:

1. Naghib-Lahouti, A., **Mehdi Nazarinia**, and Tolouei, E., **"*Drop Test of Parachutes of the Sounding Rocket Payload Recovery System",*** ARI-83-31-NSLRAE-3-1-1, July 2005.

2. **Mehdi Nazarinia**, Naghib-Lahouti, A., and Tolouei, E., ***"Calibration of sensors employed in the environmental measurement system of The sounding rocket",*** ARI-84-31-NSLINE-4-1-1, May 2005.

3. Naghib-Lahouti, A., Tolouei, E., and **Mehdi Nazarinia**, **"*Solution of Invicsid Compressible Subsonic and Supersonic Flow around a Sounding Rocket Payload"***, ARI-83-31-NSLRAE-6-2-1, February 2005.

4. Naghib-Lahouti, A., Tolouei, E., and **Mehdi Nazarinia**, **"*Preliminary Design of Sounding Rocket Payload Recovery System***", ARI-83-21-NSL-RAE-1-1-1, October 2004.

5. Naghib-Lahouti, A., **Mehdi Nazarinia**, and Tolouei, E., **"*Design, numerical flow analysis and investigation of the effects of geometric parameters on performance of an aerospike nozzle in off-design conditions***", ARI-83-21-ASN1-4-2-1, September 2004.

6. Naghib-Lahouti, A., **Mehdi Nazarinia**, and Tolouei, E., **"*Aerodynamic Analysis of SR-2 Sounding Rocket for Flight to the Maximum Altitude of 90 km***", ARI-82-31-NSL-PLC-5-3-1, August 2004.

7. **Mehdi Nazarinia**, Tolouei, E., and Naghib-Lahouti, A., **"*Aerodynamic Design and Numerical Analysis of the SR-2 Sounding Rocket Camera Aerodynamic Fairing***", ARI-83-21-NSL-RAE-6-1-1, August 2004.

8. Naghib-Lahouti, A., **Mehdi Nazarinia**, and Tolouei, E., **"*Study of the Effects of Base Truncation and Shape on Performance of a Plug Nozzle***", ARI-83-21-ASN1-4-1-1, July 2004.

9. Raeisi, K., Barhemat, I., Maghsoudi, N., **Mehdi Nazarinia**, and Ghanbarian, A., "***Flight Mechanic Laboratory Project***", ARI-81-21-FTL-1-5-1, May 2004.

10. Naghib-Lahouti, A., **Mehdi Nazarinia**, and Tolouei, E., "***Numerical Analysis of a Plug Nozzle and the Equivalent Conventional Nozzle for Comparison of their Performance in Various Conditions***"**,** ARI-83-21-ASN1-3-1-1, April 2004.

11. Naghib-Lahouti, A., **Mehdi Nazarinia**, and Tolouei, E., **"*Aerodynamic Analysis of SR-2 Sounding Rocket for Flight to the Maximum Altitude of 60 km***", ARI-82-31-NSL-PLC-5-2-1, March 2004.

12. Naghib-Lahouti, A., and **Mehdi Nazarinia**, "***Implementation of Methods to Design a Plug Nozzle Corresponding to a Specific Conventional Nozzle***"**,** ARI-82-21-ASN1-2-1-1, December 2003.

13. Naghib-Lahouti, A., **Mehdi Nazarinia**, and Tolouei, E., "***Literature Survey and Preliminary Studies on Nozzles with Aerodynamic Boundaries***", ARI-82-21-ASN1-1-1-1, November 2003.

14. Naghib-Lahouti, A., **Mehdi Nazarinia**, and Tolouei, E., "***Report on Activities Concerning Star-CD Commercial CFD Code***"**,** ARI-82-21-SCD-2-1-1, August 2003.

15. Naghib-Lahouti, A., **Mehdi Nazarinia**, and Tolouei, E., **"*Computational Aerodynamic Analysis of the SR-2 Sounding Rocket*"**, ARI-82-31-NSL-PLC-5-1-1, May 2003.

16. Tolouei, E., **Mehdi Nazarinia**, and Naghib-Lahouti, A., **"*Estimation of Longitudinal Aerodynamic Coefficients of the SR-2 Sounding Rocket*"**, ARI-81-NSLPLC-2-1-1, November 2002.

17. Naghib-Lahouti, A., and **Mehdi Nazarinia**, **"*Experimental and Numerical Analysis of a Launch Vehicle with Strap-on Boosters*"**, ARI-81-21-LTSWT-2-1-1, November 2002.

18. Naghib-Lahouti, A., **Mehdi Nazarinia**, and Khadivi, T., "***Effects of the Shape of Nose Cone of Strap-on Boosters on Aerodynamic Characteristics of a Launch Vehicle***", ARI-80-21-LTSAERNS-4-1-1, April 2002.

19. **Mehdi Nazarinia** and Naghib-Lahouti, A., **"*CFD Analysis of Iran-140 Airfoils Using Fluent 5.23*"**, ARI-81-21-SIM-1-2-1, February 2002.

20. Naghib-Lahouti, A., Khadivi, T., and **Mehdi Nazarinia**, **"*Comparison of Two Methods for Solution of Flow around a Straight Cone at Zero Angle of Attack*"**, ARI-80-31-NSLAER-1-1-1, January 2002.

21. Naghib-Lahouti, A., and **Mehdi Nazarinia**, **"*Feasibility Study Report of the Experimental Flow Analysis around a Launch Vehicle with Strap-on Boosters*"**, ARI-80-21-LTSWT-0-1-1, November 2001.

Courses

- Signal Processing Workshop, Monash University, Mechanical Engineering Department, July 2005.
- Fluent 5.23 & Gambit, Aerospace Research Institute (ARI), September 2001.
- StarCD & Pro*am, Aerospace Research Institute (ARI), January 2003.

Professional experience

Training:

06/1999 – 09/1999 Civil Aviation Training Centre Tehran, Iran

Apprenticeship

- Spending 240 hours of Training to get B.S. degree in Aerospace Engineering

Work:

08/2001 – 05/2005 Aerospace Research Institute (ARI) Tehran, Iran

Ministry of Science, Research and Technology

Position: Senior Aerospace Research Engineer

- Aerodynamic Group

Main Activities: Numerical and experimental aerodynamic analysis of satellite launch vehicles with strap-on boosters, Design and numerical analysis of internal and external flow in aerospike nozzles with various plug shapes to evaluate their performance in different flight conditions, Design and aerodynamic analysis of a rigid aerodynamic deceleration system for recovery of a sounding rocket payload, Aerodynamic design of fuselage protrusions of a sounding rocket for minimum drag and down-force in supersonic flow, Supersonic Aerodynamics.

02/2004– 04/2004 Iran Air Tehran, Iran

Position: Aircraft Systems Engineer

01/2002 – 11/2002 Iran Air Tours Tehran, Iran

Position: Flight Operations Assistant

- Preparing and Editing Company Flight Plans

07/2002– 09/2002 Sharif University of Technology Tehran, Iran

Aeronautical Industry in Iran, Assessment and Foresight

Teaching experience

07/2005-Present – Teaching Assistant of “MAE 1041: Introduction to Aerospace Engineering” course, Department of Mechanical Engineering, Monash University, Melbourne, Australia.

07/2005-Present – Teaching Assistant of “MEC 3401: Fundamentals of Heat Transfer” course, Department of Mechanical Engineering, Monash University, Melbourne, Australia.

09/2003-01/2004 - Teaching Assistant of “Aerodynamics 1” course, Department of Aerospace Engineering, Sharif University of Technology, Tehran, Iran.

09/2003-01/2004 - Teaching Assistant of "Fluid Dynamics 1" course, Department of Aerospace Engineering, Sharif University of Technology, Tehran, Iran.

Professional memberships

- Member of FLAIR (Fluids Laboratory for Aeronautical and Industrial Fluid Dynamics) team: http://www.eng.monash.edu.au/mecheng/fluidslab/
- Iranian Aerospace Society, Since March 2000, till present, student membership.
- The Iranian Society of Mechanical Engineers, Since March 1999, till March 2000, student membership.
- AIAA, Since June 2002 till September 2003, student membership.
- AIAA, Since September 2003 till Present, Member.

References

Dr. M. R. Soltani, Associate Professor, Department of Aerospace Engineering, Sharif University of Technology, Tehran, Iran, Phone: (+98) 21 6164943, Fax: (+98) 21 6022731, Email: msoltani@sharif.edu, Web: http://ae.sharif.edu/Faculty-Resume/Soltani.htm

Dr. K. Ghorbanian, Associate Professor, Department of Aerospace Engineering, Sharif University of Technology, Tehran, Iran, Phone: (+98) 21 6164946, Fax: (+98) 21 6022731, Email: ghorbanian@sharif.edu, Web: http://ae.sharif.edu/Faculty-Resume/Ghorbanian.htm

Dr. M. Mani, Associate Professor, Department of Aerospace Engineering, Amirkabir University of Technology, Tehran, Iran, Tel: (+98) 21 6454 3205, Fax: (+98) 21 6404885, Email: mani@cic.aut.ac.ir, Web: www.aut.ac.ir/official/main.asp?uid=mani

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Dr. M.C. Thompson, Associate Professor, Department of Mechanical Engineering, Monash University, Melbourne, Australia, Tel: (+61) 3 9905 9645, Fax: (+61) 3 9905 9639,
Email: mark.thompson@eng.monash.edu.au, Web: http://monash.edu/research/directory/?type=cperson&query=0000015924

Languages

- Farsi (Persian) :Mother-tongue
- English: Fluent
- Achieved ELSA (English Language Skills Assessment) certificate in December 1999.
- Achieved IELTS (GT) overall band of 6.5 in 10th of January 2004.
- Achieved IELTS (ACADEMIC) overall band of 7 in 29th of May 2004.

Hobbies

- Volleyball, Tennis, Mountain Climbing, Football (Soccer)
- Listening to Light and POP music