



## **Rahul Venkatesan**

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**DOB:** 06/04/1990

### **Education**

**December 2021 -Present**

**BITS Pilani, Pilani Campus, RJ, India**

**Junior Research Fellow in Aerospace Engineering**

**December 2021 -Jan 2022**

- Organizing committee member of the 48th National Conference on Fluid Mechanics and Fluid Power (FMFP), December 27-29, 2021, BITS Pilani, Pilani Campus, RJ, India.

**December 2021 -December 2022**

- DST sponsored research project. "**Performance Improvement of Solar Thermal Systems using Magnetic Nanofluids**". Bi-Lateral: Department of Science & Technology, Govt. of India and National Research Foundation Of The Republic Of South Africa.

**August 2019 -November 2021**

**Khalifa University, Abu Dhabi, UAE**

**Research Student in Aerospace Engineering**

**Jan 2021 – June 2021**

- Courses on advanced boundary layer theory and advanced mechanics of solids and materials

**May 2020 - December 2020**

- Courses on Advanced Composite materials and structures.

**January 2019 - May 2020**

- Courses on Advanced Continuum Mechanics and Advanced Computational Fluid Mechanics.

**August 2019 - December 2019**

- Courses on Research Methods in Engineering, Advanced Non-Linear Structural Dynamics and Advanced Damage Mechanics of Solids and Structures.

**September 2013 - December 2014:**

**The University of Manchester, Manchester, UK**

**M. Sc. in Aerospace Engineering**

**Result: Merit**

- Had undertaken courses on Advanced Computational Fluid Dynamics, Advanced Aerodynamics, Advanced Aerospace Propulsion, and Advanced Helicopter Flight.
- Carried out computational evaluation of rotor alone noise in turbo-fan engines by modifying the fan blades using Computational Fluid Dynamics (CFD) analysis software ANSYS-Fluent and compare the thrust, efficiency and noise for dissertation thesis research.
- Key learning of working in groups and solving complicated problems to ensure successful completion of project before the deadline.
- Conducted workshops in Computational Fluid Dynamics (**April 6 – June 16, 2014**) and Advanced Computational Fluid Dynamics (**June 23 – August 23, 2014**).

## Position of responsibilities at “The University of Manchester” (UOM)

- Elected as International Students Action Group Chairman in the Students Union for the international students at The Manchester University.

June 2007- July 2011: SRM University, Chennai, India

**B. Tech. in Aerospace Engineering GPA: 7.55 (Ranking in top 5 % among 45 number of graduating students)**

- Had undertaken courses on Computational Fluid Dynamics, Fluid Dynamics, Low Speed and High Speed Aerodynamics, Aerospace Propulsion, Helicopter Aerodynamics, Flight Dynamics, and Aerospace Structures.
- Carried out final year project on demonstration of shift in transition point in boundary layer flow past various bodies using smoke flow visualization technique in a low speed subsonic wind tunnel. The investigation was carried out in NACA 6-3012 aerofoil at different temperatures and at different angles of attacks under the applied condition of total heating and leading edge heating.

April 2005 - June 2007: Sri Bhagwan Mahavir Jain College, Bangalore, India.

**Science major with Physics, Chemistry, Mathematics and Biology** **Result: 64.9%**

June 2004- July 2005: Sri Narayana Mission Senior Secondary School, Chennai, India.

Central Board of Secondary Education with Mathematics and Science Result: 78.5%

## Experience

**February 2016- August 2019: Assistant Professor, School of Aeronautical Sciences, Hindustan University, Padur, Chennai, India.**

- Teaching and research in the field of aerospace.
- Taught courses on Wind Tunnel Techniques, Engineering Mechanics, Engineering Optimization, Rockets and Missiles and Aircraft Design for undergraduate students.
- Supervised undergraduate and postgraduate final semester projects towards successful completion.
- Worked on Computational Fluid Dynamics (CFD) projects and conducted workshops on advanced CFD techniques.

**January 2015 – January 2016: Ground Engineering Staff (Customer Service Executive) in Jet Airways, Chennai, India.**

- Part of ground engineering team dealing with the handling of passengers and scheduling of flights.
- Performed aircraft maintenance related activities before the flight and prepared the checklist for pre-flight.
- Part of the customer service executive and public relations team dealing with the service of customer related requests.

July 2011- July 2013: Design Engineer in HCL Technologies, Bangalore, India

- Part of design team dealing with product development of aircraft wheels, braking systems and brake control systems.
- Part of Value Analysis and Value Engineering (VAVE) project for Brake Temperature Monitoring System (BTMS) in aircraft brakes.
- Undertaken critical evaluation as a part of Component Maintenance Manuals (CMM) for aircraft wheels and brake systems.

## Technical skills

- Hands on experience in working with Catia V-5. Familiar with UniGraphics, Pro-E, CAD and Solid Works.
- Good command over MATLAB/Simulink, FORTRAN 95, ANSYS-Fluent, CFX, ANSA and STARCCM. Familiar with C/C++.

### **Other Training/ Internships**

**May 23 - July 23, 2008**

**Toyota, India**

- Knowledge gained in car aerodynamics and fuel efficiency improvement by design modification.

**June 23 - August 23, 2009**

**Ramco Systems, India**

**September 30 – November 5, 2010**

**Taneja Aviation Limited, India (TAAL)**

- Hands on training in repairing, overhaul and maintenance of aircraft parts in aviation industry.

**February 23 - March 23, 2014**

**Airbus, Broughton, United Kingdom**

- Manufacturing of aircraft wings and assembling of the aircrafts.

**April 23 - June 23, 2014**

**Airbus, Stevenage, United Kingdom**

- Satellite manufacturing and assembling.

### **Standardized Tests**

- GRE score total of 297 with 143 in verbal and 154 in quantitative
- English (IELTS – 6.5)

### **Achievements**

- Received 'Best Paper Award' for the research paper titled "Effect of Shock Wave Boundary Layer Interaction on Supersonic Combustion in Scramjet Engine", National Conference-LAMSYS 2016, held on 24<sup>th</sup> and 25<sup>th</sup> June in SDSC SHAR, Sriharikota, ISRO, India.
- Received 'First prize' for the Mathematics competition titled "KU 2nd Mathematics Musabaqat 2020 Competition ", Organized by Mathematics department, held on 1<sup>st</sup> and 3<sup>rd</sup> November in Khalifa University, Abu Dhabi, UAE.

### **Journal Publications**

- "Effect of Micro Vortex Generators in modifying the Shock Wave Boundary Layer Interaction in Scramjet Engine", Journal of Spacecraft and Technology (JST), Vol. 28, Ref. No. JST-V28 (1)-04, 2017.
- "Modifying the onset of turbulence in a low speed subsonic wind tunnel", Hindustan Aeronautical Journal (HITS), Vol. 1, Issue 1, 2018.
- "Computational Evaluation of Rotor-Alone Noise", Journal of Aerospace Sciences and Technologies", Vol. 72, No. 3, August 2019.

### **Conference Publications**

- "Computational Evaluation of rotor-alone noise in turbo-fan Engines", International Conference, pp. 1-7, GDTAME 283, ICONSTEM 2016, March 30 & 31, Jeppiaar University, Chennai, India.
- "Effect of Shock Wave Boundary Layer Interaction on Supersonic Combustion in Scramjet Engine", pp. 1-9, A1-012, National Conference-LAMSYS 2016, June 24 & 25, SHAR, ISRO, Sriharikota, India.
- "Aerothermodynamic variations associated with the change of shapes in re-entry vehicles", pp.1-10, N13D098, International Conference, NAFEMS 2016, August 30<sup>th</sup> and 31<sup>st</sup>, Bangalore, India.
- "Modifying the onset of turbulence in a low speed subsonic wind tunnel", at International Conference, pp.1-3, Paper no: 572, NSFMFP 2016, December 15-17, Motilal Nehru Institute of Technology, Allahabad, India.
- "Comparison study of nozzle design and effect of shock reflection on the ideal nozzle expansion", 44<sup>th</sup> National Conference on Fluid Mechanics and Fluid Power, pp.1-5, Paper no: 5, FMFP 2017, December 14-16, Amrita Institute, Kollam, Kerala, India.
- "Impact Analysis of Bird-Strike on Critical Components of the Aircraft", National Conference on Aerospace Technology, pp.28-29, Paper Id: NCAT18141, NCAT 2018, September 27 & 28, Hindustan Institute of Technology and Science, Padur, India.

- “Inverted Aerofoils and the Effect of Camber on Ground Force In Formula One Cars”, National Conference on Aerospace Technology, pp.35-36, Paper Id: NCAT18137, NCAT 2018, September 27 & 28, Hindustan Institute of Technology and Science, Padur, India.
- “Computational Investigation of Calibration Characteristics of a Five Hole Probe”, Paper No. 68, CD-ROM Proceedings of the Second National Aero Propulsion Conference, Dec. 17-19, 2018, IIT Kharagpur, West Bengal.
- “Computational investigation on flow dynamics and heat transfer of nanofluid in low Reynolds number under magnetic field”, Paper No. 341, CD-ROM Proceedings of the 48th National Conference on Fluid Mechanics and Fluid Power (FMFP), December 27-29, 2021, BITS Pilani, Pilani Campus, RJ, India.

#### **Patents**

- Anti-Inertial Auto Alarming Breaking Systems (Filed and Presented)
- Spacesuit Technologies for Astronaut (Filed and Presented)

#### **Invited Talk**

- “Current Trends and Future of Aerospace Technology” in Department of Aerospace Engineering, SRM University, Kattankulathur, Tamil Nadu 603203, on 5<sup>th</sup> April, 2019.

#### **Professional Membership**

- Associate member of 'The Aeronautical Society of India'(AM-7395).
- Life member of Indian Society of National Society of Fluid Mechanics and Fluid Power (NSFMFP Life Membership number: LM660).
- Life Member of ISSE (Indian Society of Systems for Science and Engineering)

#### **Sports**

- Represented state levels and county level in cricket
- Represented college volley ball team and table tennis teams
- Squash, Lawn tennis, Football and Basket Ball