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Overview:

A research fellow with over a year of experience conducting computational fluid dynamic analysis on the aerothermodynamics of re-entry capsules at hypersonic and supersonic speeds and hypersonic combustion in scramjet engines. A strong link between theory and practice from academics, practical internships, national and international competitions, and projects

Education:

Special Masters Degree in Aerospace Engineering, **Sept'2018-Jan'2022**
Sapienza Università di Roma, Italy

Thesis: Numerical Investigation of the Aerothermodynamics of an Hypersonic Re-entry Capsule

Bachelor of Engineering in Automobile Engineering, Osmania University, **Sept'2012-June2016**
Hyderabad, India

Final Project: MOWE - (Human Electric Hybrid MonoWheel)

Research Publications:

- Design of Supersonic and Hybrid engine based Advanced Rocket (**SHAR**), IOP Conf. Series: Material Science and Engineering 1226 (2022) 012031 doi: 10.1088/1757-899X/1226/1/012031
- Peri, L.N.P.; Antonella, I.; Teofilatto, P. Large-Eddy Simulations of a Hypersonic Re-entry Capsule Coupled With the Supersonic Disk-Gap-Band Parachute. *Preprints.org* **2023**, 2023050350. <https://doi.org/10.20944/preprints202305.0350.v1>
- SHAR for a TSTO Launcher, 25th AIAA International Space Planes and Hypersonic Systems and Technologies conference, <https://doi.org/10.2514/6.2023-3036>
- Understanding of the total pressure losses nature in a Scramjet Combustor, 25th AIAA International Space Planes and Hypersonic Systems and Technologies conference, <https://doi.org/10.2514/6.2023-3040>
- Investigation of shocks, boundary layer and fuel injection interaction in the HIFiRE 2 scramjet, 74th International Astronautical Congress, Baku, Azerbaijan. (Abstract accepted)

Certifications:

- Completed a certification Course on **SolidWorks** from the **Central Institute of Tool Design**, Hyderabad, India

Work Experiences:

- Worked on a defence-project from the Italian Ministry of Defence - (Progetto SIMONA) on the possible impact assessment of large debris on the ship's deck after deflagration of the launched rocket
- Designing a re-usable new launch vehicle system for efficient accessibility to the low earth orbits by integrating the scramjet and the hybrid rockets

Research Fellow in Sapienza Università di Roma**April 2022-Present**

- Currently working as a research fellow of the National Institute of Astrophysics (INAF) - Agenzia Spaziale Italiana (ASI) at the School of Aerospace Engineering 'La Sapienza' on the Aerothermodynamic analysis of the Schiaparelli capsule and also the analysis of area oscillations of the DGB parachute, deployed at supersonic speeds during the re-entry phase in the martian atmosphere

Industrial Trainee in Indian Ordnance Factory, Medak, India**July 2016-Aug' 2016**

- A case study was done on the "Processes involved in Manufacturing and Machining of Drive Wheel Assembly of **BMP-2 SARATH**". And also undergone through the study of various stages involved in the production of BMP-2 SARATH and other Combat Vehicles and their testing

Worked as an Intern in Volvo Cars, Talwar cars pvt.ltd, Hyderabad, India**Oct'2015-Nov'2015**

- A fixed tenure of one month of Internship with the organisation gave me a real life experience in working with cars, engines, electrical systems and also gained the knowledge in maintenance and replacement of car parts and various tools used to operate

Technical & Soft skills:

- **Software's known:** ANSYS - (Fluent, CFD Post-processing, Workbench), Chemkin-Pro, LS-DYNA, Matlab, DSS SolidWorks, AUTO-CAD, Pro Engineer, Microsoft (Excel, Word, Power Point), TecPlot
- Experience in conducting CFD analysis using RANS & Large Eddy Simulations (LES)
- Scientific writing, Engineering drawing, Machine drawing, Analytical thinking
- Team working, problem solving and multi tasking abilities acquired during my experience in H2020 More&Less Academy, MOWE, Supra SAE India and Eko-Kart
- A fast learner with good motivation, patience, and endurance
- Hands-on experience in working with the Composite materials (Fiberglass)
- **Workshop skills:** Lathe, Welding SMWA, MIG & TIG, Sheet metal working

Language skills:

- English, "Professional Fluency"
- Italian, "Intermediate user"

Academic Projects & Achievements:

- Received a defence project to work-on from the Italian Ministry of Defence (Progetto SIMONA)-June 2022
- Received a Research Fellowship of Agenzia Spaziale Italiana - Istituto Nazionale di Astrofisica -April 2022

Design of Supersonic and Hybrid Engine based advanced Rocket**Apr' 2021-Sept' 2021**

- I, with a team of five members, have won the 1st edition of the European MDO and Regulations for Low-boom and Environmentally Sustainable Supersonic aviation (More&Less Academy - H2020) with the Project Proposal-SHAR, Design of Supersonic and Hybrid Engine Based Advanced Rocket and obtained the highest score by presenting the design of an innovative launcher to place a 100 kg payload at an altitude of 200 km. The launcher consists of a solid booster in the first stage, an axisymmetric scramjet motor with a circular combustor in the second stage, and a hybrid motor for the third stage. And we will be going to present the project SHAR at the 11th EASN International Conference

SUPRA SAE INDIA 2015

Aug' 2014-July 2015

- Supra SAE India is the most challenging national level Formula student competition analogous to FSAE, organised by Society of Automobile Engineers (SAE). As a Vehicle body designer and fabricator, I have designed the body of the vehicle with a unique racing looks and good aerodynamics

EKO-KART 2014

Oct'2013-Feb' 2014

- Eko-Kart is a national level electric go-kart building championship for which I, with a team of fifteen members have participated in the competition by designing our kart with a full Fiberglass Chassis

Referees:

- Dr. Antonella Ingenito - Assistant Professor at the School of Aerospace Engineering 'La Sapienza'
Contact details: antonella.ingenito@uniroma1.it
- Dr. Paolo Teofilatto - Professor at the School of Aerospace Engineering 'La Sapienza'
Contact Details: paolo.teofilatto@uniroma1.it
- Dr. Giovanni B. Palmerini - Professor and Dean of the School of Aerospace Engineering 'La Sapienza'
Contact details: giovanni.palmerini@uniroma1.it