

# Prasanta Sarkar

Engineer, Researcher

PhD(Ongoing), MSc, B.Tech

prasanta.sarkar@univ-grenoble-alpes.fr

prasantasarkar089@gmail.com

linkedin.com/in/prasantasarkarfr

researchgate.net/profile/Prasanta\_Sarkar3



Grenoble, France



Indian

LEGI (UMR 5519), Université Grenoble Alpes, 38400 Saint Martin d'Hères, France

## WORK EXPERIENCE

### Designer/Marie Curie Early Stage Researcher

PZL Świdnik

04/2014 - 04/2015

Świdnik, Poland

- IMESCON (*Innovative MEthods of Separated flow CONtrol in Aeronautics*), FP7 Marie Curie ITN project in the area of active flow control technology and rotor performance prediction.
- Developed an approach for coupled multi physics simulation and optimization of piezoelectric-driven Active Flow Control Systems (AFCS) for rotor blade aerodynamics.
- Performed CFD investigation of aerofoil aerodynamics for evaluating rotor blade stall characteristics and impact of active flow control systems on alleviating dynamic stall.

### Faculty Member, Mechanical Engineering

ICFAI University Tripura

01/2013 - 07/2013

Agartala, India

- Delivered lectures on structures and properties of materials, fluid mechanics experimental techniques.
- Projects on design and engineering flow analysis.

### Research Interviewer (Part-time)

Kwest Research

01/2012 - 09/2012

Manchester, UK

### Volunteer Tutor for Literacy (Part-time)

Ansh (NGO)

03/2010 - 01/2011

Chennai, India

## HONORS & AWARDS

### Best Poster Award

International Institute for Cavitation Research

06/2017

5<sup>th</sup> Cavitation Workshop

Poster on 'Cavitation bubble dynamics and surface erosion by laser generated bubbles'

### Marie Skłodowska-Curie actions (MSCA)

Research Fellowship

European Commission

10/2015 - 09/2018

Horizon 2020 programme

### Marie Skłodowska-Curie actions (MSCA)

Research Fellowship

European Commission

04/2014 - 04/2015

FP7 programme

### Fully-funded travel scholarship

Beihang University (BUAA), Beijing, China

07/2016

International Graduate Summer School in Aeronautics and Astronautics

## SKILLS & COMPETENCIES

Persistence

Leadership

Creativity

Self-Motivation

Adaptability

Communication

## INTERESTS & LANGUAGES

Numerical Modelling

Design

Technology

Coding

Sports

Aerospace

Reading

English

Advanced

Bengali

Native

Hindi

Proficient

French

Basic

## EDUCATION & PROJECTS

### **PhD Researcher/ Marie Curie Early Stage Researcher**

Laboratory of Geophysical and Industrial Flows (LEGI), Université Grenoble Alpes

10/2015 – 09/2018

Grenoble, France

- Thesis title - ‘*Simulation of cavitation erosion by a coupled CFD-FEM approach*’.
- CaFE (*Development and experimental validation of computational models for Cavitating Flows, surface Erosion damage and material loss*), H2020 Marie Curie ITN project with the aim of developing numerical tools for investigating hydrodynamic cavitation erosion.
- Developed compressible cavitation solver with Arbitrary Lagrangian Eulerian (ALE) in the CFD code YALES2 for predicting hydrodynamic cavitation and fluid-structure interaction (FSI) problems.
- FSI model for collapsing cavitation bubble near solid boundary to predict the multi-physics coupled dynamics.
- Simplified one way FSI model for material surface deformation and mass loss from collapsing bubble using Cast3M FEM code.

### **MSc Aerospace Engineering**

The University of Manchester

09/2011 - 11/2012

Manchester, UK

- MSc Dissertation - ‘*Acoustic liners on modern turbofan engines*’.

The role of acoustic liners in the duct of large bypass turbofan engines was investigated and a practical simulation program was developed to predict fan noise trajectories of commercial aircraft engines on different flight profiles.

- Design Project - ‘*Development of a generic design process for man portable UAV systems*’.

As Project Manager (UAV design group) & Technical Leader (CAD) developed and validated a generic design process for the production of fixed wing UAVs for autonomous flight vehicle training applications with responsibilities for project planning, resource management, design definition and analysis, model parameterisation and aerodynamic analysis.

### **B. Tech Aerospace Engineering**

SRM University

08/2007 - 06/2011

Chennai, India

- *First Class with Distinction.*

- B.Tech Dissertation - ‘*Three Dimensional Numerical Study in an Afterburner of a Gas Turbine Engine*’

11/2010 - 04/2011

Gas Turbine Research Establishment, India

Studied various configurations of the flame holder while varying blockage factor and analysed flow behaviour in an afterburner for non-reacting flow conditions.

- Aircraft Design Project - ‘*Multirole combat aircraft*’.

Developed model of a multirole combat aircraft capable of air reconnaissance, defence and maritime roles and performed aerodynamic and structural analyses.

- Internship - ‘*Overhaul of RD-33 turbofan engine*’.

06/2009

Hindustan Aeronautics Limited, India

- Appreciation award in the module of Creativity, Innovation and New Product Development.
- Member of Society of Automotive Engineers & Public Relation Officer, Aerospace Engineers Association.

### **Senior School Certificate & Secondary School Examination**

Kendriya Vidyalaya

04/2000 - 05/2007

ONGC, Agartala, India

- All India Senior School Certificate Examination AISSCE-2007 - *First Class.*
- All India Secondary School Examination AISSE-2005 - *First Class.*
- Merit certificate in All India Talent Search Examination, 2004.
- Junior Diploma in Art recognised by WB State Academy of Dance, Drama, Music and Fine Arts.

## PUBLICATIONS

### Book Chapters

1. Sarkar, P., Raczynski, R. (2017) Gurney Flap Force Calculation .In: Doerffer, P., Barakos, G.N., Luczak, M. (eds.) *Recent Progress in Flow Control for Practical Flows: Results of the STADYWICO and IMESCON Projects*. Springer International Publishing, ISBN 978-3-319-50567-1.
2. Berezin, I., Sarkar, P., and Malecki, J. (2017) Fluid-structure interaction simulation .In: Doerffer, P., Barakos, G.N., Luczak, M. (eds.) *Recent Progress in Flow Control for Practical Flows: Results of the STADYWICO and IMESCON Projects*. Springer International Publishing, ISBN 978-3-319-50567-1.

### Conference

1. Sarkar, P., Ghigliotti, G., Fivel, M. and Franc, J.-P-. (2018) Numerical investigation of the dynamics of pressure loading on a solid boundary from a collapsing cavitation bubble. *10<sup>th</sup> International Symposium on Cavitation CAV2018*. Baltimore, USA.
2. Sarkar, P. (2013) Theoretical noise prediction in a lined circular duct in the presence of fluid flow. *Proceedings of The Acoustics 2013 New Delhi Conference*, India.