

Curriculum Vitae

PERSONAL INFORMATION

SHOUVIK CHAUDHURI (PhD)



Denmark – Voldgade 4, 1.tv, 6400, Sønderborg.

India - 87/12/471 E, Usha Manjaree, Flat – B1, Raja S. C. Mallick Rd.,
P.O. – Naktala, Ramgarh, Kolkata-700 047, West Bengal, India.



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<https://scholar.google.co.in/citations?user=sXYaj-AAAAAJ&hl=en>



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drshouvikchaudhuri

Sex	Male
Date of birth	16 December 1988
Nationality	Indian
Marital Status	Single
Current Status	Postdoctoral Researcher
Membership	IEEE (Member – Kolkata Section)
Reviewer	IEEE (TMech, Sensors, TVT, TIM, I2MTC) Elsevier (CEP, Mechatronics, CEA) Springer (JBSMSE, Sadhana)

WORK EXPERIENCE

01 Mar'22 – Present

Postdoctoral Fellow (AMCOSTAR Project)

Centre for Industrial Mechanics, South Denmark University (SDU), Sønderborg, Denmark

Sponsoring Agency: Eurostars / Eureka Network and Innovation Fund Denmark funded project AMCOSTAR

Project Title: Roll Stabilization of Marine vessels using the Airkeel Technology (patented by Dacoma Aps).

Principal Investigator: Prof. Jerome Jouffroy, Professor, CIM, Department of Mechanical and Electrical Engineering (DME), Sønderborg, Denmark.

Key Responsibilities:

- Development of nonlinear control algorithms for the roll stabilization of marine vessels equipped with the Airkeel Technology involving a collaboration between the consortium partners (SDU, Dacoma, TUCO Marine group, Automasjon & Data).

07 Dec'15 – 28 Feb'22

Research Fellow (CARS Project)

Hydraulics Laboratory, Jadavpur University, Kolkata, West Bengal, India

Sponsoring Agency: Centre for Artificial Intelligence & Robotics (CAIR), Bengaluru, India

Project Title: Design and Development of a Quadruped torso with external electrohydraulic power system for realisation of an autonomous robot.

Principal Investigator: Prof. Saikat Mookherjee, Professor, Department of Mechanical Engineering, Jadavpur University.

Key Responsibilities:

- Development and assembly of an electro-hydraulic quadruped robot as part of an interdisciplinary research team.
- Design and implementation of real time controllers in LabVIEW for quadruped actuation system with feedback.
- MATLAB/SIMULINK based simulation and optimization (GA based) studies.
- Maintenance and purchase of lab equipment.

02 Aug '13 – 07 Dec '15

Research Fellow (DARO Project)

Hydraulics Laboratory, Jadavpur University, Kolkata, West Bengal, India

Sponsoring Agency: Aeronautics Research & Development Board (AR&DB), India

Project Title: High-frequency real-time tracking control for linear servo actuation system.

Principal Investigator: Prof. Rana Saha, Professor, Department of Mechanical Engineering, Jadavpur University.

Key Responsibilities:

- Development of model-free and adaptive controllers for motion control of linear actuators in the high frequency regime in LabVIEW environment.
- Application of control methodologies such as Sliding mode control, Fuzzy Logic and Neural networks in synergistic combinations.
- MATLAB/SIMULINK based simulation studies.
- Maintenance and purchase of lab equipment.

COLLABORATIONS

RNA Biology Lab
(Department of Life Sc.
and Biotechnology,
Jadavpur University)

Collaborators: Prof. Biswadip Das and Dr. Subhadeep Das

Contribution: Development of image processing algorithms in MATLAB for analysing co-localization of yeast cells (*S. cerevisiae*) from confocal microscopy images.

Gachhui Lab
(Department of Life Sc.
and Biotechnology,
Jadavpur University)

Collaborators: Prof. Ratan Gachhui and Dr. Soumyadev Sarkar

Contribution: Development of image processing algorithms in MATLAB for determining the area covered by the cells and the hyphal structures of *P. laurentii* from their SEM images.

PUBLICATIONS

Journals
(First Authorship)

1. **Shouvik Chaudhuri**, Rana Saha, Amitava Chatterjee, Saikat Mookherjee and Dipankar Sanyal. *Adaptive Neural-Bias-Sliding Mode Control of Rugged Electrohydraulic System Motion by Recurrent Hermite Neural Network*.

Journal: **Control Engineering Practice (Elsevier)**, 103, pp. 104588

Published in: **October 2020**

ISSN: **0967-0661**

DOI: [10.1016/j.conengprac.2020.104588](https://doi.org/10.1016/j.conengprac.2020.104588).

**Journals
(Co-Authorship)**

2. **Shouvik Chaudhuri**, Rana Saha, Amitava Chatterjee, Saikat Mookherjee and Dipankar Sanyal. *Development of a Motion Sensing System based on Visual Servoing of an Eye-in-hand Electrohydraulic Parallel Manipulator*.

Journal: **IEEE Sensors Journal**, 20(14), pp. 8108-8116

Published in: **July 2020**

ISSN: 1558-1748

DOI: [10.1109/JSEN.2020.2979490](https://doi.org/10.1109/JSEN.2020.2979490)

3. Priyanka Datta, Aranyak Chakravarty, Ritabrata Saha, **Shouvik Chaudhuri**, Koushik Ghosh, Achintya Mukhopadhyay, Swarnendu Sen, Anu Dutta, Priyanshu Goyal. *Experimental investigation on the effect of initial pressure conditions during steam-water direct contact condensation in a horizontal pipe geometry*.

Journal: **International Communications in Heat and Mass Transfer (Elsevier)**, Vol. 121, pp. 105082

Published in: **February 2021**

ISSN: 0735-1933

DOI: [10.1016/j.icheatmasstransfer.2020.105082](https://doi.org/10.1016/j.icheatmasstransfer.2020.105082)

4. Soumyadev Sarkar, Avishek Mukherjee, Subhadeep Das, Bidisha Ghosh, **Shouvik Chaudhuri**, Debanjana Bhattacharya, Arpita Sarbajna, Ratan Gachhui. *Nitrogen deprivation elicits dimorphism, capsule biosynthesis and autophagy in Papiliotrema laurentii strain RY1*.

Journal: **Micron (Elsevier)**, Vol. 124, pp. 102708

Published in: **September 2019**

ISSN: 0968-4328

DOI: [10.1016/j.micron.2019.102708](https://doi.org/10.1016/j.micron.2019.102708)

5. Subhadeep Das, Subir Biswas, **Shouvik Chaudhuri**, Arindam Bhattacharyya, and Biswadip Das. *A nuclear zip code in SKS1 mRNA promotes its slow export, nuclear retention, and degradation by the nuclear exosome/DRN in Saccharomyces cerevisiae*.

Journal: **Journal of Molecular Biology (Elsevier)**, 431(19), pp. 3626-3646

Published in: **September 2019**

ISSN: 0022-2836

DOI: [10.1016/j.jmb.2019.07.005](https://doi.org/10.1016/j.jmb.2019.07.005)

Book Chapters

6. **Shouvik Chaudhuri**, Sibshankar Dasmahapatra, Amitava Chatterjee, Rana Saha, Saikat Mookherjee and Dipankar Sanyal. *Adaptive Fuzzy - Sliding Mode Control with Fixed Bias Compensator for an Electrohydraulic Actuation System with Hard Nonlinearities*.

Book Series: **Lecture Notes in Mechanical Engineering (LNME)**

Book Title: **Fluid Mechanics and Fluid Power – Contemporary Research**

Publisher: **Springer, New Delhi**

ISBN: 978-81-322-2743-4

DOI: [10.1007/978-81-322-2743-4_116](https://doi.org/10.1007/978-81-322-2743-4_116)

**Conference
Proceedings**

7. **Shouvik Chaudhuri**, Hossein Ramezani and Jerome Jouffroy. *Modelling and control of a canting-keel based ship roll stabilization system for crane operations*.

Conference: **IEEE International Conf. on Systems, Man and Cybernetics (SMC) 2022**

Date and Place: **Oct. 9-12, 2022, Prague, Czech Republic**

Status: **Available in IEEE Explore** (to be published shortly).

8. Rajarshi Bhattacharjee, **Shouvik Chaudhuri** and Anindita Ganguly. *Robust control of pulsatile ventricular assist devices for patients with advanced heart failure.*

Conference: **Third International Conf. on Frontiers in Computing and systems (COMSYS) 2022**

Date and Place: **Dec. 19-21, 2022, IIT Ropar, India**

Status: **Accepted for presentation**

9. Rajarshi Bhattacharjee, Soumalya Kundu and **Shouvik Chaudhuri**. *Evaluation of Workspace and Coupled Motions of an Electrohydraulic Parallel Manipulator.*

Conference: **Fourth International Conf. on Electrical, Computer and Communication Technologies (ICECCT) 2021**

Date and Place: **Sept. 15-17, 2021, Erode, Tamil Nadu, India**

Status: **Available in IEEE Explore**

DOI: [10.1109/ICECCT52121.2021.9616672](https://doi.org/10.1109/ICECCT52121.2021.9616672)

10. Soumalya Kundu, Rajarshi Bhattacharjee and **Shouvik Chaudhuri**. *Evaluation of fuzzy-logic based position control strategies for an electrohydraulic actuation system.*

Conference: **International Conf. on Advances in Electrical, Computing, Communication and Sustainable Technologies (ICAECT) 2021**

Date and Place: **Feb. 19-20, 2021, Bhilai, India**

Status: **Available in IEEE Explore**

DOI: [10.1109/ICAECT49130.2021.9392479](https://doi.org/10.1109/ICAECT49130.2021.9392479)

11. **Shouvik Chaudhuri**, Rana Saha, Saikat Mookherjee, Dipankar Sanyal and Amitava Chatterjee. *Visual sensing based adaptive sliding mode control of position tracking in electrohydraulic systems.*

Conference: **Second International Conf. on Control, Instrumentation, Energy & Communication (CIEC) 2016**

Date and Place: **Jan. 28-30, 2016, Kolkata, India**

Status: **Available in IEEE Explore**

DOI: [10.1109/CIEC.2016.7513762](https://doi.org/10.1109/CIEC.2016.7513762)

12. **Shouvik Chaudhuri**, Saikat Mookherjee and Dipankar Sanyal. *Adaptive force tracking in electrohydraulic system with first-order sliding mode control.*

Conference: **IEEE First International Conf. on Control, Measurement, and Instrumentation (CMI) 2016**

Date and Place: **Jan. 8-10, 2016, Kolkata, India**

Status: **Available in IEEE Explore**

DOI: [10.1109/CMI.2016.7413759](https://doi.org/10.1109/CMI.2016.7413759)

13. Sibshankar Dasmahapatra, **Shouvik Chaudhuri**, Pranibesh Mandal, Saikat Mookherjee and Rana Saha. *Fuzzy-PI control of motion tracking by an electrohydraulic system with multiple nonlinearities.*

Conference: **Michael Faraday IET International Summit 2015**

Date and Place: **Sept. 12-13, 2015, Kolkata, India**

Status: **Available in IEEE Explore**

DOI: [10.1049/cp.2015.1612](https://doi.org/10.1049/cp.2015.1612)

Books **14. Shouvik Chaudhuri.** *Pressurised Water Nuclear Reactor – Dynamics, Modelling and Simulation.*

Publishing House: **Lap-Lambert Academic Publishing**

ISBN: **978-620-0-09362-2**

URL: [pressurised-water-nuclear-reactors](http://www.lap-publishing.com/details.aspx?isbn=9786200093622)

ACADEMIC CREDENTIALS

14 July'15 – 01 Nov'21

PhD (Engineering)

Electrical Engineering Department, Jadavpur University, Kolkata, W.B., India

Thesis Supervisors: Prof. Amitava Chatterjee (Professor, Electrical Engg. Dept.)

Prof. Saikat Mookherjee (Professor, Mechanical Engg. Dept.)

Thesis Title: *Developing Electrohydraulic System Solutions using Adaptive-Neuro-Sliding Mode Control and Vision Sensing*

Major Fields of Work: Adaptive Control, Sliding Mode Control, Neural Networks, Image-based Visual Servoing, Electrohydraulic Actuation Systems, Parallel Manipulators.

Summary of the Work: Developing real-time control solutions for industry-grade Electrohydraulic actuation systems (EHAS) by utilizing hybrid adaptive control strategies constructed around the sliding mode control approach and the recurrent neural networks. In addition, vision based feedback control or visual servoing principles (image-based) are utilized to develop a motion sensing application with the aid of a multi-actuator EHAS or parallel manipulator (*Stewart Platform*) and a monocular camera mounted on the end-effector of the parallel manipulator.

Aug'11 – June'13

Master of Nuclear Engineering [M.E.]

Jadavpur University, Kolkata, West Bengal, India

Total Marks: 86.28%

Major Subjects: Reactor Physics & Engineering – I & II, Reactor Control Engineering, Concepts in Nuclear Science, Active Circuits & Systems, Reactor Thermal Hydraulics, Microscale Heat Transfer, Two Phase Flow.

Aug '07 – June '11

Bachelor of Technology in Electrical Engineering [B. Tech in EE]

Seacom Engineering College, West Bengal University of Technology, W.B., India

DGPA: 8.73

Major Subjects: Control Systems – I & II, Electrical Machines – I & II, EM Field Theory, Microprocessors and Microcontrollers, Digital Signal Processing.

April 2006

Higher Secondary [Class XIIth]

Kendriya Vidyalaya Ballygunge (KVB) [CBSE], Kolkata, West Bengal, India

Total Marks: 87.20%

Subjects: Physics, Chemistry, Mathematics, Biology, English.

April 2004

Secondary [Class Xth]

Kendriya Vidyalaya Ballygunge (KVB) [CBSE], Kolkata, West Bengal, India

Total Marks: 90.60%

Subjects: Science, Mathematics, Social Science, English, Hindi.

DISSERTATIONS

July '12– June '13

Postgraduate Dissertation

Bhabha Atomic Research Centre (BARC), Mumbai

Dissertation Advisor: Dr. Siddhartha Mukhopadhyay (Scientist H+, I&C Div.)

Dissertation Title: *Compact Reactor Modelling*

Major Fields of Work: Pressurised Water Nuclear Reactors, Reactor Modelling, Thermal Hydraulics, Xenon Poisoning, Reactor Regulating System, Lyapunov Stability.

Summary of the Work: Developed an analytical model of the PWR with primary and secondary loops, alongside a reactor regulating system based on first principle approach within MATLAB/Simulink environment. Stability issue of the developed models were investigated based on the Lyapunov criteria.

Dec '10– April '11

Undergraduate Dissertation

Seacom Engineering College, West Bengal University of Technology, W.B., India

Dissertation Advisor: Mr Sarbojit Mukherjee (Assistant Professor, Electrical Engineering Department)

Dissertation Title: *Study and fabrication of a battery – low indicator*

Major Fields of Work: Circuit Simulation & Fabrication, DC and Transient Analysis

Summary of the Work: Developing a low-power and efficient circuit for indicating low battery conditions of a rechargeable battery.

PERSONAL SKILLS

Mother tongue(s) Bengali

Other language(s)

English*

Hindi

UNDERSTANDING		SPEAKING		WRITING
Listening	Reading	Spoken interaction	Spoken production	
C1	C1	C1	C1	C1
C1	C1	C1	C1	C1

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2: Proficient user

*Certified by THE BRITISH COUNCIL

Proficient in

OPERATING SYSTEMS	SOFTWARES/LANGUAGES	MIC Boards
Windows x86, x64	MATLAB / SIMULINK, LabVIEW, AutoCAD, Solidworks, Automation Studio, HTML	Arduino (Uno, Nano v3, Mega 2560), Beagle Bone (blue), STM32 (Nucleo)

DISCLAIMER

I hereby declare that all the furnished information is true to the best of my knowledge. Any suspicion of fallacy can be subjected to questioning and verification.

Date: 24.11.2022

Place: Sønderborg, Denmark

Shouvik Chaudhuri

(Signature)