

# Dr. Dipankar Bhattacharya, Ph.D.

Marie Skłodowska-Curie Postdoctoral Fellow (2025–2027)

Dyson School, Imperial College London, United Kingdom



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## Summary Statement

Knowledge as such does not have much power unless it is transformed into technology, which is capable of accelerating the progress of mankind. The long cherished dream of becoming the orchestrate of transformation leads my eyes and heart towards the academics and research.


## Education

- 2016 – 2021    📖 **Ph.D., Mechatronics Engineering** in Department of Mechanical and Mechatronics Engineering, The University of Auckland (UoA), 01/08/2016 – 14/04/2021.  
Thesis title: *Robotic Soft Esophagus Design, Modelling, and Control for Endoprosthetic Stent Testing and Food Swallow Investigation*
- 2011 – 2013    📖 **M.Tech , Systems and Control** in Department of Electrical Engineering, Indian Institute of Technology (IIT), 22/07/2011 – 04/07/2013.  
Dissertation title: *Non-Linear Predictive Control Model using Relevance Vector Machine*. GPA: **8.4 / 10.0**
- 2004 – 2010    📖 **B.Tech , Electronics and Communication Engineering**, North Eastern Regional Institute of Science and Technology (NERIST), 21/07/2004 – 23/06/2010.  
Project title: *Design and Synthesis of a Sixth Order Tow Thomas Bi-quad filter*. GPA: **9.1 / 10.0**

## Employment History

- 2025 – Current    📖 **Marie Skłodowska-Curie Postdoctoral Fellow** in the Dyson School of Engg, Imperial College London, Supervisor: Prof. Thrishantha Nanayakkara, 01/11/2025 – Current.  
CASREx: *Cable-driven Arm Soft Re-configurable Exoskeleton for Muscle Impairment Rehabilitation*

## Employment History (continued)


2025     **Senior Research Engineer–Control Systems** in the Center for Transformative Garment Production (TransGP), Supervisor: Prof. Kazuhiro Kosuge, 01/05/2025 – 31/10/2025.  
*Physics-based Cloth Manipulation with policy generated from imitation learning.*


**Research Responsibilities:**


- Led a multidisciplinary team to develop high-performance models for fabric pre-sewing handling and folding.
- Investigated feasibility and oversaw development and validation of robotic systems for fabric manipulation.
- Translated industrial requirements into research deliverables through close collaboration and experimental analysis.
- Contributed to scientific papers, technical reports, and grant proposals for dissemination and funding.

**Other Responsibilities:**

- Mentoring and supervising PhD students, 3 at the moment.
- Reviewing, writing, and proofreading manuscripts.

2024 – 2025     **Postdoctoral Fellow** in the Center for Transformative Garment Production (TransGP), Supervisor: Prof. Kazuhiro Kosuge, 02/07/2024 – 30/04/2025.


 **Visiting Research Associate** in the Department of Electrical and Electronic Engineering, Hong Kong University (HKU), 02/07/2024 – 31/10/2025.

2021 – 2024     **Postdoctoral Fellow** in the Department of Mechanical and Automation, The Chinese University of Hong Kong. Supervisor: Prof. Darwin Lau, 01/03/2021 – 30/06/2024  
*Project title 1: Modeling and control of cable-driven robots with cable wrapping around obstacles and links.*




*Project title 2: Design of a cable-driven growing vine robot for safer false ceiling inspections.*

Primary responsibilities:

- Conduct independent and collaborative research, contributing to larger projects under PI supervision.
- Write research articles, proposals, and technical reports.
- Mentor undergraduate and postgraduate students; delivered lectures for **MAEG5090 Topics in Robotics**.

2021 – 2022     **Visiting Postdoctoral Fellow** in Laboratoire des Sciences du Numérique de Nantes (LS2N), École Centrale de Nantes (ECN). Supervisors: Prof. Stephane Caro and Prof. Darwin Lau, 26/10/2021 – 05/01/2022.  
*Project title: Iterative-learning control of cable-driven parallel robot.*




## Employment History (continued)

- 2017 – 2020     **Graduate Teaching Assistant** at The University of Auckland.  
*Courses taken: MECHENG 706: Mechatronics Design Projects, MECHENG 306: Design of Sensing and Actuating Systems, ENGGEN 115: Principles of Engineering Design, ENGGEN 131: Introduction to Engineering Computation and Software Development.*
- Supervised undergraduate students on design projects, guiding problem-solving and ensuring practical solutions.
  - Delivered tutorials, workshops, and drop-in clinics; provided support via online forums (Piazza, CANVAS).
  - Managed laboratory sessions and coordinated TA activities, including safety briefings and student progress monitoring.
- 2018 – 2019     **Research Assistant** at The University of Auckland, under the direction of Prof Peter Xu, 09/01/2018 – 08/01/2019.
- 2013–2016     **Lecturer (Assistant Professor Grade-1)** in School of Electrical, Electronics and Communication Engineering (SEECE) at Galgotia's University (GU), 19/07/2013–18/06/2016.
- Delivering lectures for undergraduate and postgraduate courses.
  - Developing and constructing teaching materials for lectures.
  - Supporting students in a pastoral/advisory role.
  - Delivering laboratory sessions, and managing and supervising staffs and lab technicians.
  - Supervision of final year undergraduate projects.




## Research Publications

## Grants and Scholarships

### Grants/Fellowships



- 2025     Recipient, **Horizon Europe Marie Skłodowska-Curie Postdoctoral Fellowship** for the project "CAS-REx" (Grant No. 101205678), hosted at **Imperial College London**. Funded under HORIZON-MSCA-2024-PF-01-01. Duration: 24 months, **EUR 276,187.92**.
- 2023     Co-authored Innovation and Technology Fund (ITF), Partnership Research Program (PRP) grant.
- 2022     Co-authored Research Talent Hub for ITF project (RTH-ITF) grant.
- 2018     Recipient, Dynamic testing of implant stents using Robotic Soft Esophagus (RoSE), BvW Holding, Cham, Switzerland (39,000 NZD, 1 year) .
- 2018, 2019     Recipient, Riddet Travel grant, Riddet Institute Centre of Research Excellence (3,000 NZD).

### Scholarships




- 2019–2020     Recipient, Doctor of Philosophy Scholarship, University of Auckland.
- 2016–2019     Recipient, Doctor of Philosophy Scholarship, Riddet Institute Centre of Research Excellence.
- 2011–2013     Recipient, Masters of technology Scholarship, Ministry of Human Resource (MHRD) GATE scholarship.

## Academic Awards, and Miscellaneous Achievements



### Academic Awards

- 2017     Recipient, **Best Conference paper award**, 5th International Conference on Robotic Intelligence Technology and Applications (RiTA), Daejeon, Korea.
-  **Ranked 2nd** in poster presentation in Delivery of Functionality in Complex Food Systems (DoF 2017) Conference.





### Competitive Examinations

- 2011     **Percentile: 99.12% (Rank 1,211/1,37,853)** in Graduate Aptitude Test of Engineering (GATE).
- 2010     **Percentile: 96.00%** in Graduate Aptitude Test of Engineering (GATE).
- 2004     **Ranked 31st** in All India Junior mathematics Olympiad.

### Professional Activities

- 09/08/2025     Invited Speaker, **World Robotics Conference (WRC 2025)**, Beijing, China. Presented research on *Fabric modeling and perception for garment manufacturing*, exploring robotics and AI solutions for fabric representation, simulation, and real-world applications.
- 03/08/2025     Workshop Organizing and Presentation “Mesh-based Fabric State Estimation and Manipulation.” IEEE International Conference on Mechatronics and Automation (ICMA 2025) – Workshop on Robotics for Automated Garment Production, Beijing Empark Grand Hotel, Beijing, China.
- 2021 - Current     Reviewer of IEEE Robotics and Automation Letters (RAL), IEEE International Conference on Robotics and Automation (ICRA), ASME Journal of Mechanisms and Robotics (JMR).
- 2017 - Current     Member of the Institute of Electrical and Electronics Engineers (IEEE).
- 2014     Former member of the Electrical Engineering Society (EES), IIT Roorkee, and NERIST Electronics Society (NES), NERIST.
- 2006     Have an ‘Outstanding Certificate’ in National Service Scheme (NSS) for contributing in activities like blood donation camps, village cleanliness programmes and children education.

## Skills

- Languages     Strong reading, writing and speaking competencies for English, and Hindi.
- Coding     PyTorch, Gym framework, Blender, MATLAB, Python, ROS, LabVIEW, Assembly level languages (Microprocessor: 8085, 8086 and MASM 32 and Microcontroller: 8051), and  $\text{\LaTeX}$ .
- Software and misc     Blender, SOLIDWORKS, Inventor, Inkscape, Git, and Lightroom.
- Microprocessors     Raspberry Pi, myRIO, and Arduino.

## References

### Prof Kazuhiro Kosuge

Chair Professor of Robotic Systems  
Electrical & Electronics Engg,  
Hong Kong University,  
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Hong Kong.  
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### Prof Peter Xu

Chair in Mechatronics  
Mechanical Engineering,  
The University of Auckland,  
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### Prof Darwin Lau

Associate Professor  
Mechanical & Automation Engg,  
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### Prof G.N. Pillai

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