



## SCDT – FlexE Centre Webinar Series

*The webinars aim to bring together researchers in Flexible Electronics and allied areas from across India (and other countries) on a single platform to promote professional interaction.*

### Abstract of the Webinar

Even with today's most advanced robots, we remain reluctant to trust a robot to hold a hamster or physically examine a patient. The elegance of physical interactions we do in daily life seems to come from a fine interplay among the dynamics and computing in the brain, the body, and the environment. However, it is very difficult to map it out using human participants alone. How about using robots as a proxy to living beings to understand the nuances of such interactions because we can control and measure details of information flow that way? In this talk, I will discuss the work in the Morphlab under the overarching question of understanding how passive dynamics and computing can come together to solve complex interaction problems. I will group examples under three phenomena I think are important to untangle the puzzle: Ghost circuits, kinematic tuning, and behavioral lensing that I will further elaborate in the upcoming Springer Nature Handbook on Soft Robotics. A few such examples include how the shape of nails and bones in the fingertip help to classify textures, how an origami inspired endoscopic capsule can use stiffness change to collect more data from intestines, how fish scale shaped tactile sensor skins can reduce noise, and how passive dynamics in a mountain goat hoof contribute to slip reduction.

### Information about the speaker

Thrishantha Nanayakkara is a professor of robotics at Imperial College London (ICL). He is the director of Morphlab at the Dyson School of Design Engineering. His main research interests are in embodied intelligence. He uses soft robots to test hypotheses on how the kinematics and dynamics of the physical body help to solve complex real-time physical interaction problems. Prior to ICL, he has been at Kings College London, MIT, Harvard, and Johns Hopkins University.

### Webinar by



### Dr. Thrishantha Nanayakkara

Dyson School of Design Engineering -  
Faculty of Engineering, Imperial College  
London

on  
"Taking a Soft Robotics Approach to  
Understand Embodied Intelligence"

Date: 10<sup>th</sup> March 2026

Time: 7:30 PM to 8:30 PM

Visit [www.iitk.ac.in/scdt/webinars.html](http://www.iitk.ac.in/scdt/webinars.html)  
to access the zoom link to join the  
webinar.

The event will be chaired by

### Dr. Himanshi Jangir

Indian Institute of Technology Kanpur