



Robotics@IIT Delhi & IHFC (Cobotics Company)

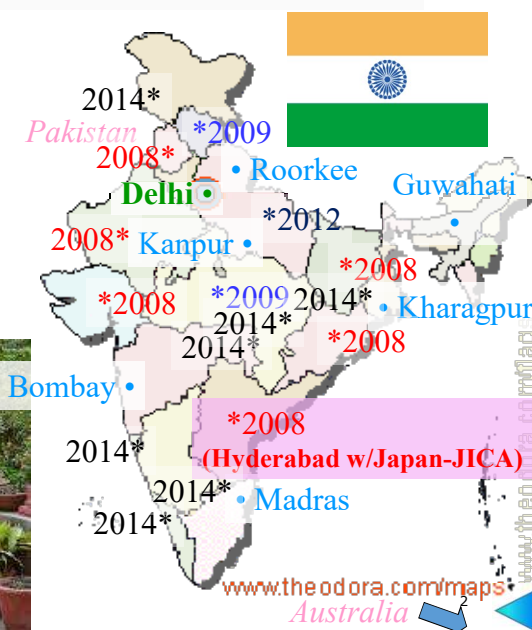
Prof. S.K. Saha

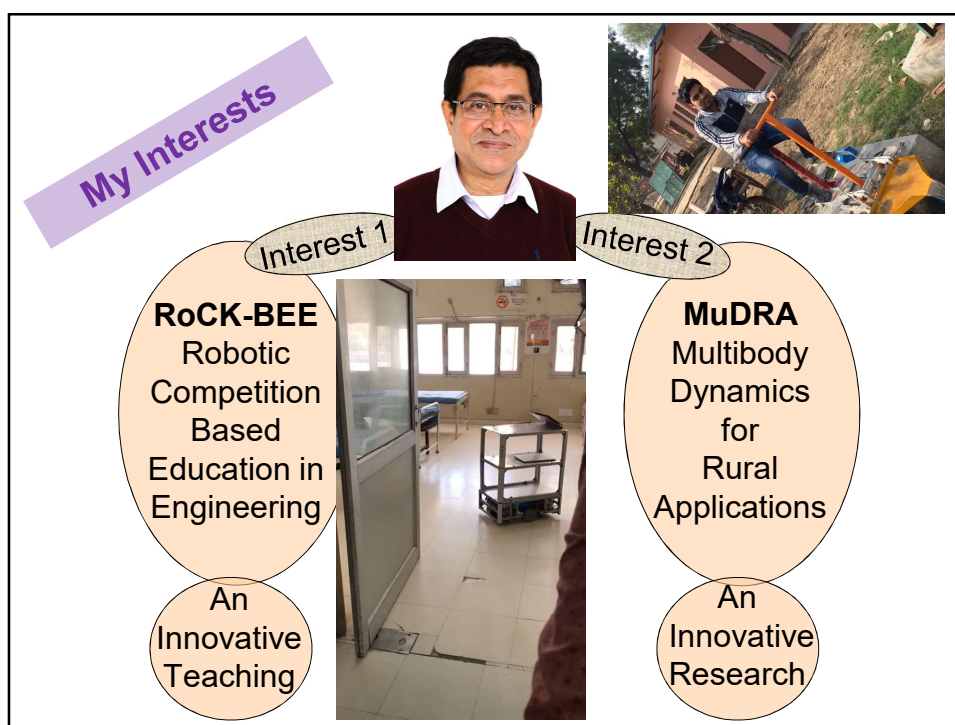
Dept. of Mech. Eng.
Indian Institute of Tech. Delhi
INDIA

January 27, 2021@SIT, Japan



Introduction to IITs (23) and IIT Delhi

- Indian Institute of Technology (IIT): Centers of Excellence
- **IIT Delhi** (1961): Celebrating 60 Years
 - 320 acres + 2 Satellite Campuses
 - 10,000 UG/PG/PH. D





Mechatronics Lab.@IIT Delhi



Brochure

Estd. 2001

Annual Report 2014

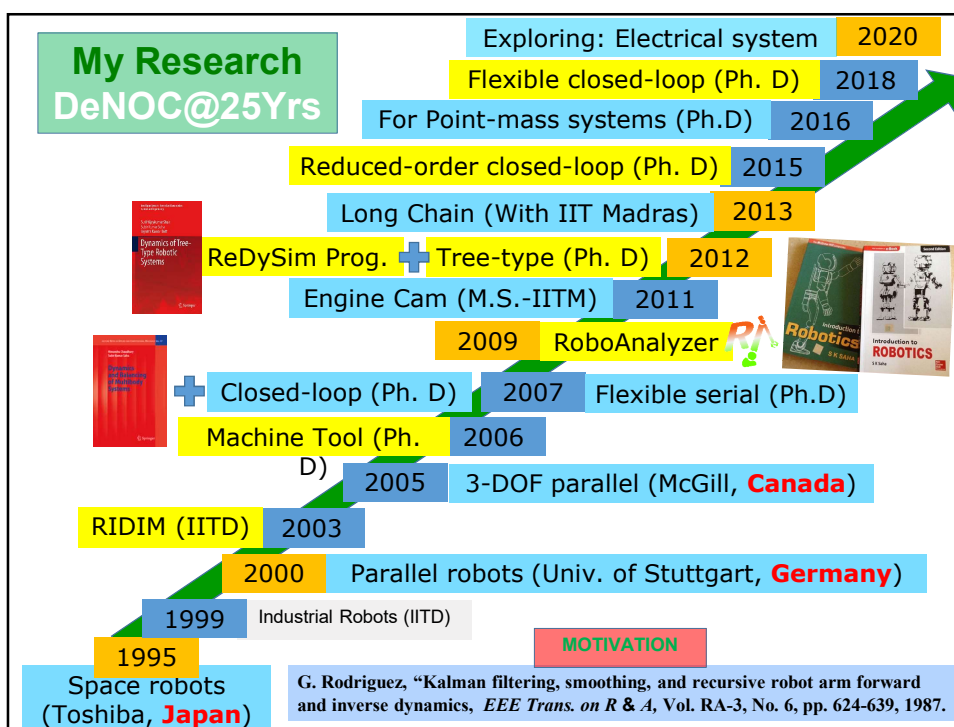
Truck Simulator



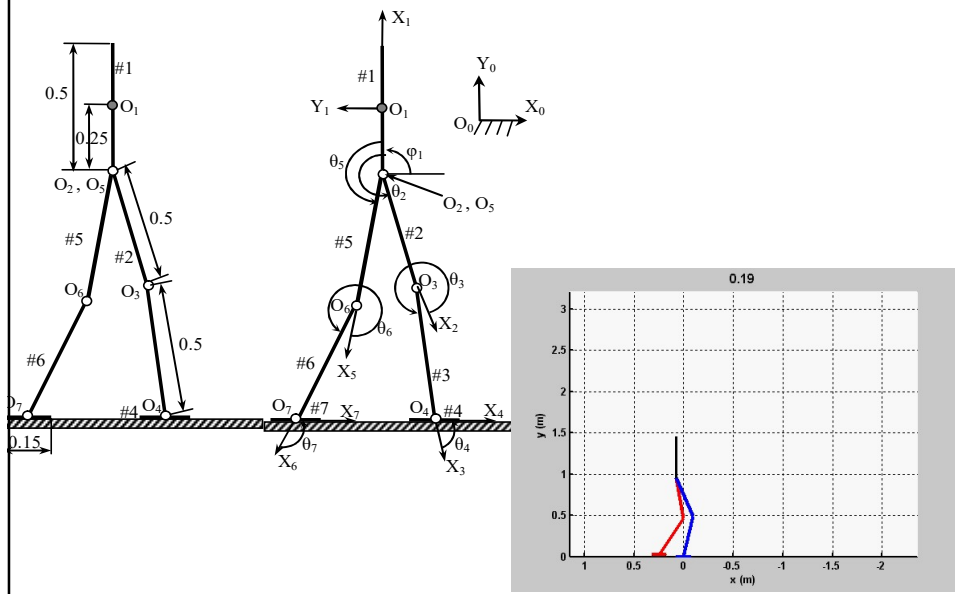
Programme for Autonomous Robotics
(Sponsored by BARC/BRNS)

PAR Lab. @ IIT Delhi
(12 Faculty + 20 Students)

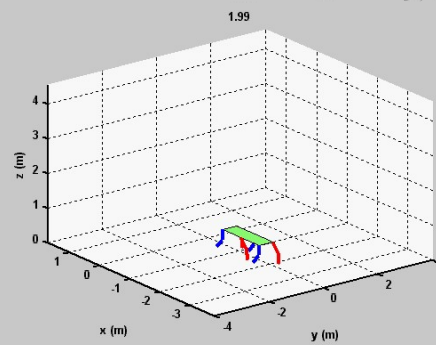
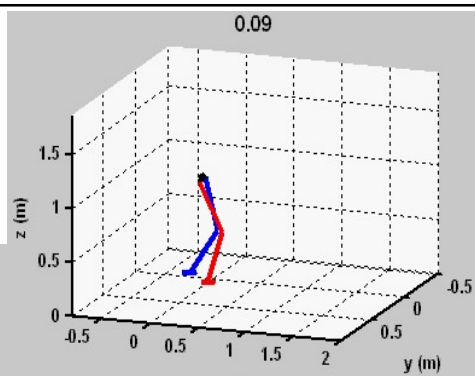
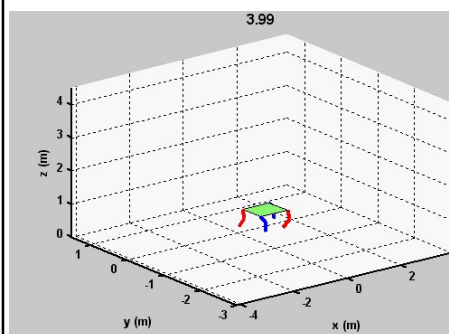
Visit us at <http://robotics.iitd.ac.in>



Planar biped



More robots





I-Hub Foundation for Cobotics

[A Non-profit Company for the Technology Innovation Hub under the National Mission on Interdisciplinary Cyber Physical Systems]

Theme: Human-Robot Collaboration

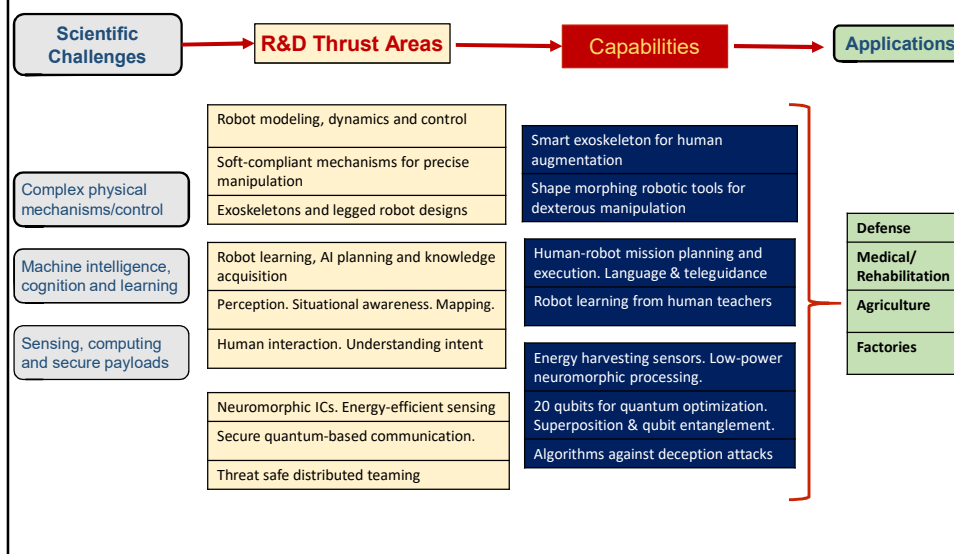


विज्ञान एवं प्रौद्योगिकी विभाग
DEPARTMENT OF
SCIENCE & TECHNOLOGY

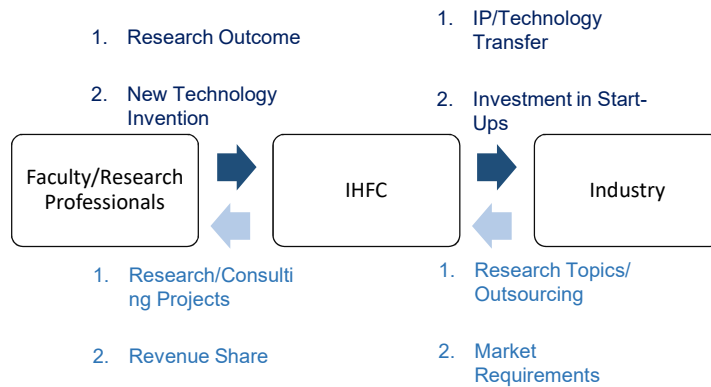
Courtesy: Prof. Rohan Paul and others

Research Program Design:

INT (**I**deation, knowledge **N**ucleation and **T**ranslational model)



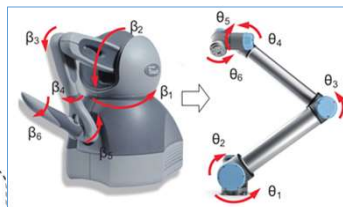
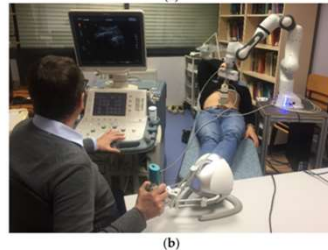
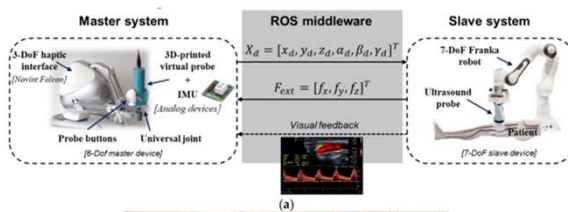
Role of I-Hub Foundation for Cobotics (IHFC)



IHFC to be an interface between Industry and Research/Academia

Courtesy: Ashutosh Dutt Sharma (CEO, IHFC)

Tele-USG Robot during Covid-19



- Master-slave type teleoperation
- **Master:** Geomagic Touch Haptic device by 3DSystems, (earlier named as PHANTOM Omni)
- **Slave:** 6-DOF UR5 cobot arm with force sensing / Universal Robots UR5e

Collaboration

IIT Delhi, AIIMS Delhi, & Addverb, Glimonn Research

Ref: Sandoval, J., Laribi, M. A., Zegloul, S., Arsicault, M., & Guilhem, J. M. (2020). Cobot with Prismatic Compliant Joint Intended for Doppler Sonography. *Robotics*, 9(1), 14.

Tele-USG Testing



Summary

- Robotics Research at IIT Delhi was explained.
- IHFC (I-Hub Foundation for Cobotics) activities were explained.
- IIT Delhi is eager to collaborate with SIT and its partners.