


## PERSONAL INFORMATION

## Deep Seth

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Gender Male | Date of birth 12 October 1989

Nationality Indian



## WORK EXPERIENCE AND TRAINING

## Aug 2017 – Present Assistant Professor

Mahindra Ecole Centrale, Hyderabad, India

– Instructor in-charge of Robotics course.

## May 2017 – July 2017 Research Associate/Post-Doc - Sof Exo-suit/Exoskeleton

BIOROB Inc., KOREATECH, Cheonan, South Korea

- Development of **robotic exoskeleton** and exo-suit for human rehabilitation.
- Design and development of **actuators**, exoskeleton and exosuit.
- study of material requirement for soft exo-suit and its implement with experiments.

## September 2013 – July 2016 Ph.D. Researcher - Automation, Production and Robotics

IRCCyN, Ecole Centrale de Nantes

1, Rue de la Noë, 44300 Nantes (France)

- **Research methods and statistical procedures.**
- Study of various **muscle fatigue models** and its ergonomics application.
- Expertise in **EMG signal processing and model validation.**
- Work experience on **Biodex, Powerlab and Contrex bio-mechanics equipments**
- Research based experience on **Matlab, Labchart, AutoCAD, ProE and OpenSim.**

## 18 June 2009 – 17 July 2009 Summer Internship/Training - Mechanical Workshop

Hindustan Aeronautics Limited, Accessories Division, Lucknow

200, Indira Nagar, Lucknow, Uttar Pradesh 226016, (India)

- Work with **MasterCAM programming** for precision machining of aircraft parts.
- Study and practice on precision manufacturing machines.

## 1 July 2008 – 31 July 2008 Summer Internship/Training - Diploma in Mechanical CAD

CADD Centre, Agra, (India)

- Training on **AutoCAD and Pro/Engineer Modeling** software.
- 2D and 3D modeling and assembly of the machine parts.

## EDUCATION

- September 2013 – July 2016 **Doctor of Philosophy (Ph.D.): Contribution to the evaluation of muscle fatigue model and recovery model - Robotics**  
IRCCyN, Ecole Centrale de Nantes, France
- July 2011 – June 2013 **Master's of Technology: Manufacturing Engineering (1<sup>st</sup> Class Distinction) (Score: CGPA 9.32/10)**  
National Institute of Technology, Warangal, India  
**Project(2012-2013):** Prototype Model of 'Transmission Line Inspection and Maintenance Robot'
- July 2006 – June 2010 **Bachelor's of Technology: Mechanical Engineering (1<sup>st</sup> Class)(Score: 71.4% Marks)**  
Uttar Pradesh Technical university, Lucknow, India  
**Project:** Working model of 'Automatic Transmission in Bicycle'

## PROJECTS DESCRIPTION

- September 2013 – July 2016 **Ph.D. Research Project**  
IRCCyN, Ecole Centrale de Nantes  
1, Rue de la Noë, 44300 Nantes (France)  
Ph.D. Project: "Contribution to the evaluation of muscle fatigue model and recovery model", with simulation and experimental validation. The objective is to mathematically and experimentally validate a dynamic muscle fatigue model so that this model can be used to develop a software platform applicable in industries to study muscle fatigue for different working postures. The dynamic model of fatigue is developed with a co-contraction factor for more realistic fatigue analysis. The objectives and summarized outline of the project is as follows:  
  - A new muscle fatigue model was proposed with a new co-contraction factor.
  - With number of experiments the data was collected for EMG muscles activities of biceps, triceps and trapezius muscles.
  - The model was then validate and compared with state of the art model.
  - The Proposed model is better than other models in terms of maximum endurance time (MET).
  - The model is safer for experiment design and work design in industries.  
One of the best paper in Laval Virtual, VRIC-2016  
Project funded by European Commission under Erasmus Mundus Heritage Fellowship
- July 2012 – June 2013 **Master's Thesis Project**  
National Institute of Technology, Warangal, India  
Prototype Model of 'Transmission Line Inspection and Maintenance Robot': The aim of this project is to develop a prototype robot model which can inspect high tension transmission lines without taking shutdown. We develop a small transmission line arena and then develop a small model of robot that can work on that transmission line with all the obstacles included. The robot can be controlled wireless from a remote device and with the help of a camera attached on robot base. The project worked well on arena with some limitations. Later, the project was presented in Powergrid GRIDTECH-2016, International Conference and Exhibition on new technology in transmission.  
Project funded by Institute of Engineers, India (IEI)

July 2009 – June 2010 **Bachelor's Thesis Project**

HCST, Mathura

Uttar Pradesh Technical University, Lucknow, India

Working model of 'Automatic Transmission in Bicycle': The project is related to the development of automatic transmission in bicycle. We develop a model mechanism in bicycle for automatic control of derailleur gears according to the speed of bicycle. A lever mechanism was developed to control the derailleur gear with electronic control. The input of speed of bicycle is converted to current and for each current limit lever was controlled to change gears.

**PERSONAL SKILLS**

**Software and Computer skills**

- **Software:** AutoCAD, Pro/Engineer, CNC Programming, CAD Design, MATLAB, Labchart, LaTeX, MS-Office, OpenSIM, Machine learning, Artificial Intelligence.
- **OS Preferences:** Windows, MAC, Linux.
- **Language:** C (Basic), Python(Basic).

**Organisational / managerial skills**

- Co-ordinator of Annual Inter-College Cultural and technical festival of the institute in 2009.
- Work as Associate Manager in organizing Annual Inter-College Cultural and technical festival of the institute in 2008.
- Member of Institute of Engineers India (IEI).

**Mother tongue** Hindi

Other languages	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	Fluent	Fluent	Fluent	Fluent	Fluent
French	Intermediate	Intermediate	Beginner	Beginner	Intermediate

**Awards and Honors**

- Heritage **Erasmus Mundus** Fellowship Funded by European Union (2013)
- Participated in 'Students Inovation Pavilion' of GRIDTECH-2013, New Delhi, India (2013)

**Hobbies** Like to play Sudoku. Enjoy all sports particularly cricket and running. Love to travel and experience different cultures.

**ADDITIONAL INFORMATION**

**Publications**

- **Preliminary Design of Soft Exo-Suit for Arm Rehabilitation**, HCII-2019, DHM 2019, pp 284-294. DOI: 10.1007/978-3-030-22219-2\_22
- **Design and Development of an Electric Skateboard Controlled Using Weight Sensors**, HCI-2018, DHM 2018, pp 275-285. DOI: 10.1007/978-3-319-91125-0\_24
- **New Dynamic Muscle Fatigue Model to Limit Musculo-Skeletal Disorder**, Laval Virtual 2016, DOI: <http://dx.doi.org/10.1145/2927929.2927935>
- **Experimental validation of a New Dynamic Muscle Fatigue Model**, HCI-2016, DHM 2016, pp 54-65. DOI: 10.1007/978-3-319-40247-5\_6
- **Validation of a New Dynamic Muscle Fatigue Model and DMET Analysis**, International Journal of Virtual Reality, 2016, 16(01), 22-32, (2016)

- References
- **Damien Chablat**, CNRS, IRCCyN, Ecole Centrale de Nantes, France, e-mail: Damien.Chablat@irccyn.ec-nantes.fr +33 2 40 37 69 48.
  - **Fouad Bennis**, IRCCyN, Ecole Centrale de Nantes, France, e-mail: Fouad.Bennis@ec-nantes.fr +33 2 40 37 25 74.
  - **Sophie Sakka**, CNRS, IRCCyN, Ecole Centrale de Nantes, France, e-mail: Sophie.Sakka@irccyn.ec-nantes.fr +33 2 40 37 69 45.
  - **Dr. Vasu V**, Assistant Professor, Department of Mechanical Engineering , National Institute of Technology, Warangal, India, e-mail: vasu@nitw.ac.in +91 87 02 46 23 56.