Europass
Curriculum Vitae

Personal information

First name(s) / Surname(s)	**Shivesh KUMAR**
Address	Room – C.2.1.1, Galileo Residenz GmbH, Fahrenheitstrasse 19-25, 28359 Bremen, GERMANY
Mobile	+49 - 15227194878
E-mail(s)	shivesh.mecheng@gmail.com, shivesh.kumar@dfki.de
Nationality	Indian
Date and Place of birth	28 March 1992, New Delhi, INDIA
Gender	Male

Current employment   **Researcher, DFKI GmbH**

Work experience

Dates	1 October 2015 - *Present*
Occupation or position held	Full time Researcher
Main activities and responsibilities	Involved in two projects: 1. **RECUPERA**: A full body exoskeleton for rehabilitation purposes. My responsibilities in this project include kinematics and dynamics of the full body exoskeleton which involve various PKMs for mimicking various human joints motion. A novel parallel spherical mechanism has been recently patented by our institute and I am involved in its kinematic and dynamic analysis. 2. **BILATERAL**: Safe Physical Human Robot Interaction using KUKA LBR robots. My responsibilities include implementation of sensor less collision detection and isolation, development of reaction strategies in various collision scenarios etc.
Name and address of employer	Robotics Innovation Centre, German Research Centre for Artificial Intelligence (RIC, DFKI GmbH), Bremen, GERMANY
Dates	1 February 2015 – 31 August 2015
Occupation or position held	Master's thesis
Main activities and responsibilities	Contribution to Modeling of Human Walking gait over a Stride based on robotics for Pedestrian Navigation Solution
Name and address of employer	Prof. Yannick AOUSTIN (IRCCYN), Prof. Eric Le CARPENTIER (IRCCYN), Prof. Valerie RENAUDIN (IFSTTAR), Nantes (FRANCE)
Dates	4 July 2014 - 31 August 2014
Occupation or position held	Summer Intern
Main activities and responsibilities	Developed RBDLPY (Python interface for Rigid Body Dynamics Library using Boost Python) Simulation of rigid body contacts in multi-body systems using RBDLPY
Name and address of employer	Dr. Nicolas MANSARD, Humanoid Robotics Group(GEPETTO), Laboratory for Architecture of Autonomous Systems(LAAS-CNRS), Toulouse(FRANCE)
Dates	February 2014 - June 2014
Occupation or position held	Master M1 student
Main activities and responsibilities	Online upper body human imitation using BAXTER robot

Name and address of employer	Prof. Sophie SAKKA, IRCCYN, Nantes(FRANCE)
Dates	January 2013 - May 2013
Occupation or position held	Bachelors thesis
Main activities and responsibilities	[Design and Development of SHRIMP Rover](#)
Name and address of employer	Prof. K V Gangadharan, Centre for System Design, National Institute of Technology Karnataka, Surathkal(INDIA)
Dates	14 May 2012 - 31 July 2012
Occupation or position held	Summer Intern
Main activities and responsibilities	Modal Analysis and Modal Reduction of any System using MATLAB & Ansys.
Name and address of employer	Mr. Simon Althoff, Institute of Mechatronics & Dynamics, University of Paderborn Furstenalle 11, 33102 Paderborn (GERMANY)
Dates	10 May 2011 - 31 July 2011
Main activities and responsibilities	Robot Modeling & Dynamic Simulation using RecurDyn & Autodesk Inventor, Development of an Automatic DH Extraction Algorithm and its implementation as an addon in Autodesk Inventor
Name and address of employer	Prof. Subir Kumar Saha, Mechatronics Lab, Indian Institute of Technology Delhi Hauz Khas, 110016 New Delhi (INDIA)
Dates	May 2010 - July 2010
Occupation or position held	Summer Trainee & Intern
Main activities and responsibilities	Training in the field of Embedded Systems and Robotic Manipulator design Project - Design & Development of a Card Dealer Robotic Arm
Name and address of employer	ThinkLABS, IIT Bombay, 113/114,1st Floor Phulora CHSL Opp IIT Main Gate, Powai, Mumbai(INDIA)

Education and training

Dates	03 September 2013 → 31 August 2015
Title of qualification awarded	Masters of Science
Principal subjects / occupational skills covered	Control Engineering, Robotics and Applied Informatics (ARIA-ROBA) with specialization in *Advanced Robotics*
Name and type of organisation providing education and training	Ecole Centrale de Nantes 44321 NANTES (FRANCE)
Relevant Courses(Completed – Grades available in transcripts)	Modeling and Control of Manipulators, Control of Linear Multi-variable Systems, Signal Processing, Advanced Robot Programming, Computer Vision, Real time Systems, Mechanical Design Methods in Robotics, Software Architecture for Robotics, Nonlinear Controls, Mobile Robotics, Artificial Intelligence, Optimization Techniques, Advanced Modelling of Robots, Vision based Control in Robotics, Humanoid Robotics, Optimal Kinematics Design of Robots, Intelligent Vehicles, Capture and Simulation of Human motion, Bibliography study for Gait and Device Carrying Mode Detection for Increased Autonomy (Master's thesis topic)
GPA	15.7/20
Dates	22 July 2009 → 09 May 2013
Title of qualification awarded	Bachelor of Technology
Principal subjects / occupational skills covered	Mechanical Engineering
Name and type of organisation providing education and training	National Institute of Technology Karnataka (Institute of National Importance) 575025 Surathkal (India)
GPA	8.59/10
Dates	22/05/2009
Title of qualification awarded	All India Senior School Certificate Examination
Principal subjects / occupational skills	English, Computer Science, Mathematics, Physics, Chemistry

	covered
Name and type of organisation providing education and training	Kendriya Vidyalaya (Affiliated from CBSE, New Delhi) CRPF Campus, Jharoda Kalan, 110072 New Delhi (India)
Aggregate Percentage Marks	88% (1st rank in school)
Dates	29/05/2007
Title of qualification awarded	All India Secondary School Examination
Principal subjects / occupational skills covered	English, Hindi, Mathematics, Science, Social Studies
Name and type of organisation providing education and training	Kendriya Vidyalaya (Affiliated from CBSE, New Delhi) CRPF Campus, Jharoda Kalan, 110072 New Delhi (India)
Aggregate Percentage Marks	89.2% (2nd rank in school)

Personal skills and competences

Mother tongue(s) **Hindi/English**

Other language(s)

Self-assessment	Understanding		Speaking		Writing	
European level (*)	Listening	Reading	Spoken interaction	Spoken production		
English[1]	C2 Proficient user	C2 Proficient user	C2 Proficient user	C1 Proficient user	C2	Proficient user
French[2]	A2 Elementary user	B1 Intermediate user	A2 Elementary user	A2 Elementary user	B1	Intermediate user

(*) Common European Framework of Reference (CEF) level
1 – IELTS Score – 7.5/9 (Very good user)
2 – French Language courses scores at Ecole Centrale de Nantes(FLAN1 score – 14.5/20, FLAN2 score – 14/20 marked as Good performance)

Academic Achievements

1. Received conference grant from Function Dynamics India Pvt Ltd. to present my research paper at 6th Asian Conference on Multi-body Dynamics 2012, Shanghai, China.

2. Recipient of prestigious **DAAD scholarship** to pursue an internship in Germany during May-July 2012.

3. Recipient of **CBSE Central Sector Scholarship 2009** for my undergraduate studies in Mechanical Engineering

4. **A grade certification** in Summer Training & Internship Program in the field of "**Robotic Manipulators**" under the guidance of Kamal Wadhwa, Technical Associate, Thinklabs, IIT Bombay.

5. Amongst the **top 1%** students out of a total of approx. 1.1 million students, who appeared for the "**All India Engineering Entrance Examination**,2009" conducted by Central Board of Secondary Education for the admission into prestigious N.I.Ts/R.E.Cs.

6. Was always among **top 3 rankers** in the school. Got **1st** position in class **12th** examination and **2nd** position in class **10th** examination at school level.

Social skills and competences

Cosmopolitan

I have lived all my life in a multi-cultural, multi-lingual, multi-ethnic society in Delhi, India. The same applied to my stay at NITK Surathkal where I met brilliant students from all over the country. Also, my stay in Paderborn, Germany gave me a brief idea of the cultural diversity in Europe and provided me a platform to work with researchers from various countries across the globe. Also, it further motivated me to study in Ecole Centrale de Nantes with a lot of Erasmus Students from different countries. I had an opportunity to learn French language and the French culture. Now I have recently moved to Germany where I work in the world's largest research centre for artificial intelligence with a very international team.

Organisational skills and competences

- Leadership

I held the position of the Joint Convener of Robotics Club, NITK where my responsibilities were taking top-level decisions for the club activities and events, motivating students to take up projects,

organizing events etc.

- Teamwork and Sense of organisation.

I have been involved with IE's student chapter for 3 years where we worked in teams to finish various small scale engineering projects. We also conducted various events to motivate students to take up engineering projects. Also, I have experience of working with dynamic research teams for example IRCCYN, LAAS-CNRS on cutting edge research topics. All this has captivated in me a great sense of organization, strong motivation and individuality and also the spirit of working with a research team.

Technical skills and competences	Hands-on experience with Fitting, Carpentry, Sheet metal work, Wood turning machine tools, Metal Cutting, Lathe operations, Shaping operation, Gear Cutting & Grinding (Workshop courses in B.Tech curriculum)
Computer skills and competences	**CAD Software**: AutoCAD, Autodesk Inventor, CATIA, Pro E
	CAE Software: ADAMS MSC, DELMIA, Autodesk Inventor Dynamic Simulation Environment, ANSYS, RecurDyn, LabVIEW
	Technical Computing Software: MATLAB/SIMULINK, Scilab, Mathematica
	Programming Languages: C/C++, Python, Visual Basic, Visual C#, CNC Programming
	Embedded Systems: Atmega16 and Atmega2560 microcontrollers.
	Robot Programming Languages: VAL/V+
	Standard Robot platforms: PUMA 560, Staubli RX90, BAXTER robot
	Version Control Tools: GitHub, SVN and BitBucket
	Operating Systems: Windows, Linux (Ubuntu 12.04 LTS), ROS-Groovy(Robot Operating System), Robot Construction Kit (RoCK)
	Others: OpenCV library, Rigid Body Dynamics Library(C++), Lua Scripting language, Boost Python, Numpy/Scipy, CVXOPT (for optimization problems) etc.
Artistic skills and competences	Technical Writing (Guest student writer for AMM-India News Bulletin + Various technical publications in international conferences)

Additional information

Publications:

1. **Shivesh Kumar**, B Sai Deepak, "Design and Implementation of a Card Dealer Robotic Arm", International Conference on Design and Advances in Mechanical Engineering (ICDAAME) 2011

2. **Shivesh Kumar**, B Sai Deepak, S M Kulkarni, "Interfacing robotic manipulators with Open-source Computer Aided Drafting packages for Path-Tracing applications", 4th IEEE International Conference on Electronics Computer Technology 2012

3. Rajeev Lochan C.G., Subir Kumar Saha, **Shivesh Kumar** "Automatic Extraction of DH Parameters from Line Geometry", 2nd Joint International Conference on Multi-Body System Dynamics 2012, Stuttgart, Germany

4. **Shivesh Kumar**, "CAD/CAE Simulations of Mechanisms and Robots", Association of Machines and Mechanisms (AMM-India) News Bulletin, April 2012 Issue.

5. **Shivesh Kumar**, Rajeev Lochan C.G., Subir Kumar Saha, "Realistic Modeling and Dynamic Simulation of KUKA KR5 Robot using RecurDyn", 6th Asian Conference on Multi-Body Dynamics, Shanghai, China.

6. **Shivesh Kumar**, Raghavendra S, Mihir Bhagat, K V Gangadharan, "Modeling and Dynamic Simulation of SHRIMP rover using RecurDyn", 12th Symposium on Advanced Space Technologies in Robotics & Automation (ASTRA 2013), European Space Agency (ESA), The Netherlands.

References:

Dr. Nicolas MANSARD	**Dr. Ing. Bertold Bongardt**
Permanent Researcher	Researcher
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