

# SUMUKH BANSAL

## EDUCATION

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07/2014–till now	PHD RESEARCH SCHOLAR, DA-IICT Gandhinagar, India Title: Lie bodies bases 3D shape analysis Research Area: 3D Shape Analysis, Geometric Deep Learning, and Computer Vision Advisor: Dr. Aditya Tatu
07/2011–06/2013	MASTER OF TECHNOLOGY DA-IICT Gandhinagar, India Specialization in Machine Intelligence (ICT) Advisor: Dr. Aditya Tatu
07/2007–06/2011	BACHELOR OF TECHNOLOGY Gautam Buddh Technical University, Lucknow, India Specialization in Computer Science and Engineering

## WORK EXPERIENCE

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03/2019 –06/2019	<b>Visiting Graduate Researcher,</b> Institute for Pure and Applied Mathematics (IPAM) University of California, Los Angeles, USA
07/2014 –02/2019	<b>Teaching Assistant,</b> DA-IICT, Gandhinagar, India Courses assisted for: Computer Graphics, High Performance Computing, Modeling and Simulation, Discrete Mathematics and Computational Optimization.
07/2013–05/2014	<b>Assistant Professor,</b> Parul Institute of Engineering and Technology, Limada, Vadodara.
07/2011–06/2013	<b>Teaching Assistant,</b> DA-IICT, Gandhinagar, India Courses assisted for: Algebraic Structure and Computer Graphics.

## PUBLICATIONS

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### Journal

1. Sumukh Bansal and Aditya Tatu, **Active Contour Models for Manifold Valued Image Segmentation**, Journal of Mathematical Imaging and Vision, vol. 52, no. 2, pp 303-314, Feb 2015. DOI: <https://doi.org/10.1007/s10851-015-0562-3>.

### Conference

1. Sumukh Bansal, Aditya tatu, **Affine Interpolation in a Lie Group Framework**, The 46th International Conference on Computer Graphics and Interactive Techniques (ACM SIGGRAPH 2019), Los Angeles, USA.
2. Sumukh Bansal, Aditya tatu, **Lie Bodies Based Deformation Transfer**, The 11th Indian Conference on Computer Vision, Graphics and Image Processing (ICVGIP 2018), Hyderabad, India.
3. Sumukh Bansal, Aditya Tatu, **Lie Bodies Based 3D Shape Morphing and Interpolation**, 15<sup>th</sup> ACM SIGGRAPH European Conference on Visual Media Production (CVMP 2018), London, UK. <https://doi.org/10.1145/3278471.3278477>
4. Aditya Tatu and Sumukh Bansal, **A Novel Active Contour Model for Texture Segmentation**, 10th International Conference on Energy Minimization Methods in Computer Vision

## MANUSCRIPTS UNDER REVIEW

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### Conference

1. Sumukh Bansal, Aditya Tatu, Pratik Shah **Using Lie bodies for Interactive Shape Deformation**, submitted to 27th annual international conference on computer graphics and applications (Pacific Graphics 2019).

## TALKS AND PRESENTATIONS

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1. Poster on **Using Lie bodies for Interactive Shape Deformation**, Workshop on Shape Analysis conducted at Institute for Pure and Applied Mathematics, Los Angeles, USA.
2. Talk on **3D Shape Morphing and Interpolation**, 3D shape analysis seminar, Institute for Pure and Applied Mathematics, Los Angeles, USA.
3. Presentation on **Manifold Valued Image Segmentation**, Inter-Research-Institute Student Seminar in Computer Science (IRISS 2016), Trivandrum India, January 2016.

## AWARDS

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1. Travel grant of 2500 USD from Google research, India.
2. Travel grant of 1200 USD from the University of California, Los Angeles, USA.
3. Travel grant of 75K INR from Microsoft Research India.
4. Travel grant of 60K INR from DA-IICT, Gandhinagar.

## WORKSHOPS AND TUTORIALS ATTENDED

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1. Long program on **Geometry and Learning from Data in 3D and Beyond** conducted by Institute for Pure and Applied Mathematics, Los Angeles, 10 March - 15 June 2019.
2. Mini-course on **Evolution and Computation** conducted by Global Initiative on Academic Network (GIAN) at Indian Institute of Information Technology, Allahabad, 28 June - 5 July 2016.
3. Mini-course on **3D Digitization for Cultural Heritage** conducted by Global Initiative on Academic Network (GIAN) at Indian Institute of Technology Gandhinagar, 30 November - 11 December 2015.

## SKILLS

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PROGRAMMING: MATLAB, Python, C/C++  
SCRIPTING: Javascript, HTML  
LIBRARY: OpenGL, WebGL, IGL, EIGEN, Numpy, Tensorflow, Keras

## PROFESSIONAL AFFILIATION

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- IEEE student member.
- ACM student member.
- SIGGRAPH member.

## PERSONAL DATA

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NAME: Sumukh Bansal  
GENDER: Male  
PLACE AND DATE OF BIRTH: Chandpur, India — 26 July 1989  
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INSTITUTION: Dhirubhai Ambani Institute of Information and Communication Technology, Gandhinagar (DA-IICT), India