Suvam Patra **Curriculum Vitae**

CONTACT INFORMATION

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WEBPAGE

http://www.cse.iitd.ac.in/∼suvam/

WORK EXPERIENCE

Scape Technologies Ltd., London, United Kingdom

Research Engineer, Geometric Computer Vision, December 2019 - Present

- Large Scale Sparse 3D Reconstruction
- Distributed Mapping Framework
- Structure-from-Motion for Multiple Camera Types

RESEARCH INTERESTS

My primary research interest lies in the field of Geometric Computer Vision and Graphics. I have worked on Large scale 3D reconstruction using images and also on 3D Sensor Fusion using Kinect. A large part of my recent work during my PhD also focuses on Simulataneous localization and mapping (SLAM) using first-person and car-mounted cameras and its applications on Autonomous Navigation. Currently at Scape Technologies ltd., I am working on distributed and hierarchical reconstructions to aid 3D mapping which can scale to large cities.

EDUCATION

Indian Institute of Technology Delhi, New Delhi, India

Ph.D., Computer Science and Engineering, September 2019

- Thesis: *Robust Scene Geometry Recovery from Ego-cameras for Visual Navigation*
- Advisers: Subhashis Banerjee, Chetan Arora and Prem K Kalra

Indian Institute of Technology Delhi, New Delhi, India

M.Tech., Computer Science and Engineering, July 2012

- Thesis: *Resolution Enhancement of Kinect Point Cloud*
- Adviser: Subhashis Banerjee and Prem K Kalra
- GPA: 9.225/10.0

Bengal Engineering and Science University (curr. IIEST) Shibpur, WB, India

B.E. (Hons.), Computer Science and Technology, June 2010

- Percentage: 85.57 (1st Class Honors)

St. Lawrence High School, West Bengal, India

West Bengal Higher Secondary Examination (Class XII), 2006

- Percentage: 85.6

Rishra Vani Bharti, West Bengal, India

West Bengal Secondary Examination (Class X), 2004

- Percentage: 89.63

Refereed Conference Publications

1. Suvam Patra, Kartikeya Gupta, Faran Ahmad, Chetan Arora and Subhashis Banerjee
   "EGO-SLAM: A Robust Monocular SLAM for Egocentric Videos", IEEE Winter Conference on Applications of Computer Vision (WACV) 2019.

2. Suvam Patra, Pranjal Maheshwari, Shashank Yadav, Chetan Arora and Subhashis Banerjee
   "A Joint 3D-2D based Method for Free Space Detection on Roads", IEEE Winter Conference on Applications of Computer Vision (WACV) 2018.

3. Shashank Yadav, Suvam Patra, Chetan Arora and Subhashis Banerjee
   "Deep CNN with Color Lines model for unmarked road segmentation", IEEE International Conference on Image Processing (ICIP) 2017.

4. Suvam Patra, Himanshu Aggarwal, Himani Arora, Chetan Arora and Subhashis Banerjee
   "Computing Egomotion with Local Loop Closures for Egocentric Videos", IEEE Winter Conference on Applications of Computer Vision (WACV) 2017.

5. Brojeshwar Bhowmick, Suvam Patra, Avishek Chatterjee, Venu Madhav Govindu and Subhashis Banerjee
   "Divide and Conquer: Efficient large-scale structure from motion using graph partitioning", Asian Conference on Computer Vision (ACCV) 2014.

6. Suvam Patra, Brojeshwar Bhowmick, Subhashis Banerjee, and Prem Kalra
   "High Resolution Point Cloud Generation from Kinect and HD Cameras Using Graph Cut", International Conference on Computer Vision Theory and Applications (VISAPP) 2012.

Refereed Journal Publications

1. Brojeshwar Bhowmick, Suvam Patra, Avishek Chatterjee, Venu Madhav Govindu and Subhashis Banerjee
   "Divide and conquer: A hierarchical approach to large-scale structure-from-motion", Computer Vision and Image Understanding (CVIU), Vol.157, pp.190-205 2017.

Awards and Recognitions

Receiver of TCS Research Fellowship 2013–17

Teaching Assistantship Excellence Award for the course: Digital Image Analysis (CSL783) Fall 2014

Served the community as a sub-reviewer in IJCAI 2018

Positions of Responsibility held

Teaching Assistant 2010–17

Worked as Teaching Assistant in advanced courses Digital Image Analysis, Computer Vision and Numerical Algorithms

Programming Language Skills

I have experience of coding in C/C++, Python, Matlab and Unix Shell Scripting

References

- Prof. Subhashis Banerjee
  Department of Computer Science and Engineering
  Indian Institute of Technology Delhi
  Hauz Khas, New Delhi - 110016, India
  Email : suban@cse.iitd.ac.in

- Prof. Chetan Arora
  Department of Computer Science and Engineering
  Indian Institute of Technology Delhi
  Hauz Khas, New Delhi - 110016, India
  Email : chetan@cse.iitd.ac.in

- Prof. Venu Madhav Govindu
  Department of Electrical Engineering
  Indian Institute of Science
  Bengaluru - 560012, India
  Email : venug@iisc.ac.in

- Prof. Prem Kumar Kalra
  Department of Computer Science and Engineering
  Indian Institute of Technology Delhi
  Hauz Khas, New Delhi - 110016, India
  Email: pkalra@cse.iitd.ac.in