



Suryansh Kumar
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EDUCATION

- **THE AUSTRALIAN NATIONAL UNIVERSITY.** Sept.2015 - Till date.
Ph.D in Engineering and Computer Science.
Research Area: Computer Vision.
Supervisory Panel: Yuchao Dai, Hongdong Li, Richard Hartley.
- **IIIT-HYDERABAD.** July 2011 - July 2013.
M.S. in Computer Science and Engineering.
Research Area: Robot Vision.
Supervisor: K Madhava Krishna.

RESEARCH INTERESTS

- **COMPUTER VISION:** Structure from Motion, Motion Segmentation, Optical Flow.
- **ROBOTICS:** SLAM, Visual SLAM.
- **MATHEMATICS:** Mathematical Optimisation, Compressed Sensing, Topological Manifolds.
- **OTHERS:** Discrete Differential Geometry, Deep Learning.

AWARDS AND ACHIEVEMENTS

- Winner of CVPR NRSFM challenge 2017 sponsored by Disney Research.
- Student funding to attend ICML 17, Sydney Australia and ICCV 17, Venice Italy.
- Student funding to attend Robot Vision Summer School 2016, Kiola, Australia.
- Recipient of “Australian National University Higher Degree Research” Merit Scholarship Award.
- Recipient of “Best Innovative Group 2014”, by Uurmi Systems Private Limited, India.
- Full-Time Funded Student for research internship at INRIA, Grenoble-France.
- Full-Time Scholarship Student for MS program in IIIT-Hyderabad, India.
- Winner of “8085 Programming” and “Project Demonstration” contest at TITIKSHA 2008.

PUBLICATIONS

1. **Suryansh Kumar**, Yuchao Dai, Hongdong Li. “**Monocular Dense 3D Reconstruction of a Complex Dynamic Scene from Two Perspective Images**”, International Conference on Computer Vision (**ICCV**), IEEE, 2017, Venice, Italy.
2. **Suryansh Kumar**, Yuchao Dai, Hongdong Li. “**Spatio-Temporal Union of Subspaces for Multi-body Non-rigid Structure-from-Motion**”, Pattern Recognition Journal (**PR**), Elsevier, 2017, Impact Factor: 4.582. (**Awarded Best algorithm in NRSFM Challenge CVPR 2017**)
3. **Suryansh Kumar**, Yuchao Dai, Hongdong Li. “**Multi-body Non-rigid Structure from Motion**”, International Conference on 3D Vision (**3DV**), IEEE, 2016, Stanford University, USA.
4. **Suryansh Kumar**, Siva Karthik M, K. Madhava Krishna. “**Markov Random Field based Small Obstacle discovery over Images**”, International Conference on Robotics and Automation (**ICRA**), IEEE, 2014, Hong Kong, China.

5. **Suryansh Kumar**, Ayush Dewan, K. Madhava Krishna. “A Bayes filter based adaptive floor segmentation with homography and appearance cues”, Indian Conference on Computer Vision, Graphics and Image Processing (**ICVGIP**) ACM, 2012, IIT-Bombay, India. (**Oral**)

PROFESSIONAL SERVICE

- **REVIEWER:** 3DV 2017, ICRA 2018, CVPR 2018.
- **TA, INDIVIDUAL ENGINEERING PROJECT COURSE.** (ENGN4200) Feb. 2017 - July 2017.
Course Instructor: Yuchao Dai.
- **TA, COMPUTER VISION COURSE.** (ENGN4528/6528) Feb. 2017 - July 2017.
Course Instructor: Jonghyuk Kim.
- **CONSULTANT-ENGINEER, ALGORITHM DEVELOPER.** July 2014 - July 2015.
Company: Uurmi Systems, Hyderabad, India.

RESEARCH EXPERIENCE

- **INRIA, e-MOTION, GRENOBLE-FRANCE.** Sept. 2013 - Feb. 2014.
Research Intern.
Topic: Autonomous Driving
Supervisors: Dizan Vasquez, Christian Laugier.
- **IIT-HYDERABAD, INDIA.** Jan. 2011 - Aug. 2013.
Research Assistant.
Topic: Robot Vision
Supervisor: K Madhava Krishna.
- **IIT-HYDERABAD, INDIA.** Aug. 2010 - Dec. 2010.
Project Associate.
Topic: Pervasive Sensor Networks
Supervisor: P. Rajalakshmi.

TECHNICAL SKILL SET

- **Programming Language:** C/C++ (5+years of experience), Python, Java and Assembly.
- **Scripting Language:** Matlab, Octave, Unix Shell Programming.
- **Libraries and APIs:** OpenCV, OpenGL, ROS, Eigen, STL(C++, Java), Pangolin.
- **Web and Documentation:** HTML, CSS, L^AT_EX.
- **Others:** Embedded C, Unix System Programming.

LANGUAGES

English, Hindi, Magahi.

References are available on request