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, Object Tracking.
- Applied Mathematics: Mathematical Optimisation, Compressed Sensing, Topological Manifold, Machine Learning.
- Robotics: SLAM, Visual SLAM.

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.
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.
- 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, Rhone Alpes, Grenoble-France. Sept. 2013 - Feb. 2014.
  Research Intern.
  Topic: Autonomous Driving
  Supervisors: Dizan Vasquez, Christian Laugier.
- IIIT-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, Latex.
- Others: Embedded C, Unix System Programming.

Languages

English, Hindi, Magahi.

References available on request