

# Manohar P. Kuse, PhD

Robotics Institute

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## Fields of Interest

Computer Vision, SLAM, Machine Learning, Robot Navigation and Planning, Parallel Computing

## Academics

**Ph.D.** Electronics and Computer Engg. (2013-2019)

*Institute: The Hong Kong University of Science & Technology (HKUST), Hong Kong*

*Thesis Title: "Techniques for a Failsafe Visual Inertial SLAM Systems"*

**B.Tech.** Communication and Computer Engg. (2008-2012),

*Institute: The LNM Institute of Information Technology (LNM IIT), Jaipur, India*

*Major: Computer and Communication Engineering*

## Skills

*Programming Languages: C/C++, Python*

*Machine Learning : TensorFlow, keras, caffe*

*Vision and Graphics: OpenCV, Panda3d*

*Robotics : ROS, KiCAD (EDA)*

*High Performance Computing : OpenMP (Parallel Computing), CUDA (GPU Programming)*

*Others: MatLAB, L<sup>A</sup>T<sub>E</sub>X, Qt, cmake, git, mongodb, docker*

## Research Experience

**European Organization for Nuclear Research (CERN), Geneva, Switzerland – Aug-Dec 2012**

Code optimization and parallelization of AliRoot.

Technologies used: C++, Valgrind, Google Performance Tools, OpenMPs etc.

**Dept. of Computer Science, University of Warwick, Coventry, UK – May-Jul 2011**

Development of algorithms for automated analysis of histology imagery.

Technologies used: MatLAB.

**SenoCAD Research GmbH, Alkmaar, The Netherlands – Jan-Mar 2011**

Development and acceleration of tools for computer assisted medical diagnosis

Technologies used: OpenCV, Qt, CUDA.

## Selected Publications

### Journal

**Kuse M.**, Shen S. "Learning Whole-Image Descriptors for Real-time Loop Detection and Kidnap Recovery under Large Viewpoint Difference" *Robotics and Autonomous* (2019), Accepted

Ling Y., **Kuse M.**, Shen S. "Direct Edge Alignment-Based Visual-Inertial Fusion for Tracking of Aggressive Motions" *Springer Autonomous Robots* (2017), Impact factor 2.706 in 2016.

### Conference

**Kuse M.**, Jaiswal SP, Shen S., "Deep-Mapnets: A Residual Network for 3D Environment Representation" *International Conference on Image Processing (ICIP-2017)*, Beijing, China.  
Funding courtesy of and HKUST Research Travel Grant (RTG).

**Kuse M.**, Shen S. "Robust Camera Motion Estimation using Direct Edge Alignment and Sub-gradient Method" *International Conference on Robotics and Automation (ICRA-2016)*, Stockholm, Sweden.  
Funding courtesy of and HKUST Research Travel Grant (RTG).

**Kuse M.**, Jaiswal S. P. "Graph Modelling of 3D Geometric Information for Color Consistency of Multiview Images" *International Conference on Image Processing (ICIP-2015)*, Quebec City, Canada.  
Funding courtesy of 'IEEE Signal Processing Society (SPS)' and 'HKUST'.

Tripati A. S., Mathur A., Daga M., **Kuse M.**, Au Oscar C. "2-SiMDoM: A 2-Sieve Model for Detection of Mitosis in Multispectral Breast Cancer Imagery" *International Conference on Image Processing (ICIP-2013)*, Melbourne, Australia.

**Kuse M.**, Wang YF, Kalasannavar V., Khan M. & Rajpoot N. "Local Isotopic Phase Symmetry Measure for Detection of Beta Cells" HIMA Workshop *International Conference on Medical Image Computing and Computer Assisted Intervention MICCAI-2011*, Toronto, Canada.  
Funding courtesy of 'American Society for Clinical Pathology' and 'LNMIIT'.

Full list available at : <https://scholar.google.com.hk/citations?user=Fu3FSv4AAAAJ>

## References

**Prof. Shaojie Shen**  
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(Supervisor)

**Prof. Oscar C. Au**  
Former Professor  
HKUST, Hong Kong  
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**Dr. Nasir Rajpoot**  
Professor  
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