Atul Kumar MBBS MMST PhD

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ECFMG certification number: 0-710-213-0 **USMLE Step1-80(196) Step2-79(196) Step3-77(197)**

SUMMARY OF QUALIFICATIONS

- Multi-disciplinary background in **Biomedical Engineering and Medicine**
- Experienced in research for **computer assisted surgery and computer assisted diagnosis**

EDUCATION

Cleveland State University, Cleveland, OH **2007-2011**

Doctor of Engineering: Applied Biomedical Engineering

Dissertation topic: Design of an implant for the first metatarsophalangeal joint hemiarthroplasty.

Indian Institute of Technology, Kharagpur, India **2004- 2007**

MMST (Master of Medical Science and Technology)

Patna Medical College, Patna, India **1996- 2002**

MBBS (Bachelor of Medicine and Bachelor of Surgery)

RESEARCH AND EMPLOYMENT EXPERIENCE

Research Fellow

Asian Institute of Telesurgery, IRCAD-Taiwan R.O.C **Oct 2011- Present**

Current:
- Metric 3D reconstruction from colonoscopic images
  - Image processing and computer vision algorithms are used to create a 3D virtual model from endoscopic images
- Augmented reality during endoscopic surgery
  - Computer vision algorithm based as well as electromagnetic tracker based systems are under development for enhancing the endoscope view with the 3D virtual model of patient's body.

Past:
- Stereoscopic visualization during Minimally Invasive Surgery
  - Computer vision algorithm and GPU programming were used to make software for converting conventional endoscope video to stereo video in near real-time.
- Panoramic view during laparoscopy
  - Software for creating 2D and 3D panorama view with the superimposed current video scene during the endoscopic surgery was developed.
- Characterization of liver tumors in CT image
  - Hepatocellular carcinoma architecture in the CT scan images was characterized with texture analysis and machine learning algorithms to detect hepatocellular carcinoma regions in CT scan images.