

Chinmay Nandan Samant

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RESEARCH INTERESTS

Computer Vision, Medical Imaging, Machine-Learning & Robotics

EDUCATION

Research Engineer, PhD Student SIEMENS-HEALTHCARE, ICUBE-CNRS, University of Strasbourg	Strasbourg, France Nov 2015 - Current
<ul style="list-style-type: none">• Ultrasound laparoscopic guidance for minimally invasive surgery, biopsy, and ablation procedures.• Hand-Eye calibration based on semi-definite programming.• IMU-Camera information fusion for advanced indoor positioning.	
Masters in Computer Vision (Erasmus Mundus Vision & Robotics) University of Bourgogne-FrancheCompte	Le Creusot, France Sept 2013 - Aug 2015
<ul style="list-style-type: none">• Medical Imaging, Image Processing, Scene Segmentation and interpretation, Visual Tracking, Machine Learning, Neural Networks• Autonomous, Probabilistic Robotics, Self-calibration, Localization, Computer Vision, 3D reconstruction/ registration, Visual Servoing	
Masters in Electronic Science University of Pune	Pune, India Aug 2010 - Apr 2012
<ul style="list-style-type: none">• Embedded systems design, Digital Signal Processing• Analog, power electronics design	
Bachelors in Electronic Science University of Pune	Pune, India Aug 2007 - Apr 2010
<ul style="list-style-type: none">• Minors: Mathematics, Physics, Statistics	

WORK EXPERIENCE

SIEMENS-HEALTHCARE, France	Nov 2015 - Present
Engineer Localization and tracking of Laparoscopic Ultrasound Probe	
ICUBE-CNRS, France	Aug 2015 - Oct 2015
Research Engineer Software development for marker tracking in MRI	
ICUBE-CNRS, University of Strasbourg, France	Feb 2015 - Jul 2015
Intern Real-time marker segmentation and tracking in MRI	
LE2i-CNRS, University of Bourgogne, France	Jul 2014 - Aug 2014
Intern Wood texture analysis and classification	
Center for Sensor Studies, University of Pune, India	Jul 2012 - Jun 2013
Research Assistant Ultrasonic Transducer Applications	

PROJECT EXPERIENCE

Simulator and test-bed for Robot Hand-Eye calibration

- MATLAB based simulator to test hand-eye calibration methods on real & simulated data.

Hardware development of sensors integrated ultrasound laparoscope.

- Sensor-to-sensor fixed calibration using convex optimization.

Medical imaging tool for object volume reconstruction

- A MATLAB tool for manual segmentation and volume reconstruction in medical images

3D reconstruction simulation tool for pattern projection based active camera systems

- Simulation of a camera and projector system for virtual 3D reconstruction

FPGA based signal processing module

- Temperature signal processing module, VGA display and other controls

Robotics surveillance

- Autonomous robotic surveillance with Turtlebot based of ROS.

Wavelets based compression and filtering

- Image analysis with wavelets and its applications

Single View Metrology tool for Height estimation

- A MATLAB tool for depth and height estimation using a single webcam

Kohonen network learning for classification of patient data

- Implementation in MATLAB to classify complex patient movement data

Computer Vision/Image Processing Toolbox

- Implemented in OpenCV and MATLAB, built with complete user interface for Images, Videos and Live camera feed.

PCA based face recognition

- PCA was implemented to detect faces out of pool of images. Implemented in MATLAB.

Interactive Map Software

- Google maps alike offline map software created for city of Le Creusot, using OpenCV and MATLAB.

Masters in Electronics Thesis: Non-Contact Liquid Level Measurement using Ultrasonic Sensors

- An Ultrasonic Sensor system was developed to measure liquid level without contact.

SKILLS

- Software: C/C++, MATLAB, Python, ROS, VHDL, Assembly
- Electronics: Microcontroller Programming, Hardware Design

ADDITIONAL

Fluent in English, Marathi, Hindi. French Basic; Hobbies: Tech gadget analysis & testing, music & sports