

KARAN SIKKA

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ACADEMIC QUALIFICATION

University of California San Diego

PhD, Electrical and Computer Engineering

- Advisor: Dr. Serge Belongie
- UCSD Computer Vision Lab
- GPA: 3.85/4.0

La Jolla, CA

Started Fall 2010

Indian Institute of Technology (IIT) Guwahati

B.Tech, Electronics and Communication Engineering

- Thesis: Image Annotation and Content Based Image Retrieval centered Image Query System
- GPA: 9.08/10

Guwahati, India

2006-2010

RESEARCH INTERESTS

Not limited to

- Computer Vision
- Machine Learning
- Augmented Reality

PUBLICATIONS

1. **K.Sikka**, N.Sinha, P.K Singh and A.K Mishra, "A Fully Automated Algorithm under Modified FCM Framework for Improved MR Image Segmentation", Magn Reson Imaging (Elsevier); vol. 27, iss. 7, pp. 994-1004, Jan. 2009.
2. P.K Singh, N.Sinha, **K.Sikka** and A.K Mishra, "A Hybrid Methodology for the Segmentation of SAR Images of Flood Inflicted Regions ", Int J Remote Sens (Taylor & Francis). (under print)
3. **K.Sikka** and T.M Deserno, "Comparison of Algorithms for Ultrasound Image Segmentation without Ground Truth", SPIE Medical Imaging Conference- 2010; 7627.

RESEARCH EXPERIENCE

1. Dept. of Medical Informatics, RWTH Aachen, Germany

Summer Intern – Sponsored by DAAD (German Academic Exchange)

-Supervisor - Prof. Thomas M. Deserno, Professor, Dept. of Medical Informatics

Aachen, Germany

May, 2009 – July, 2009

2. Indian Institute of Technology

Summer Intern

-Supervisor - Prof. Amit Kumar Mishra, Assitant Professor, Dept. of ECE, IIT Guwahati, India.

Guwahati, India

May, 2008 – July, 2008

MAJOR PROJECTS

1. **GroZi- Grocery shopping assistant**, Dr. Serge Belongie, Associate Professor, Dept. of Computer Science, UCSD (undergoing)- Assist the blind in grocery shopping using a real time object detection framework. Focus on recognizing in-vitro images (objects in natural settings) using in-situ instances (images obtained from web).
2. **Content Based Image Retrieval**, Dr Kannan Karthik, Assistant Professor, Dept. of ECE, IIT Guwahati (undergraduate thesis) –Focused on employing image features (rather than textual keys) for searching large image databases. This work culminated with the fusion of low level (region based features) and high level features (image annotations) encoding context to tackle intra-class variability in low level image features.
3. **Segmentation of abdominal ultrasound images and evaluation of different clustering algorithms**, Dr. Thomas M Deserno, Professor, Dept. of Medical Informatics, RWTH Aachen, Germany (May, 2009 - July, 2009) – Mathematical framework was developed for comparing segmentation maps from different clustering techniques on ultrasound images without the application of ground truth.

4. **Segmentation of SAR Images through texture (via Wavelets) and intensity information**, Dr Amit Kumar Mishra, Assistant Professor, Dept. of ECE, IIT Guwahati (Sept, 2008 - Nov, 2008) - SAR images, sent by ISRO (Indian Space Research Organization), were segmented for automatically delineating flood regions. Texture and intensity cues were merged for fuzzy classification of the information rich SAR images.
5. **Segmentation of Brain-MRI (Magnetic Resonance Imaging) Images**, Dr Amit Kumar Mishra, Assistant Professor, Dept. of ECE, IIT Guwahati (May, 2008 - July, 2008)- Automated Segmentation algorithm was developed for Brain MRI Images using fuzzy c-mean (FCM) to tackle domain problems like image inhomogeneity and clustering noise.

RELEVANT COURSES

Graduate: Statistical Learning- I, Random Process, Computer Vision- Structure from Motion and Object Recognition, Parameter Estimation, Convex Optimization (To be completed by Spring 2010)

HONORS

- **Jacobs Scholarship UCSD**- three year fellowship- highest form of recognition for any PhD candidate in ECE Dept.
- Awarded an **SPIE** Contingency Student Travel Grant for SPIE Medical Conference, 2010.
- **DAAD**- German Academic Exchange Service, Undergraduate Internships, 2009.
- Silver Certificate, National Science Olympiad, India.

LEADERSHIP ROLES

1. **GENERAL SECRETARY**, CEPSTRUM- Electronics Society, IIT Guwahati (2009-2010)
Headed the society for organizing talks and events to share knowledge and disseminate new technical ideas among the students. Initiated:
 - Inter-departmental Research Groups in IITG.
 - Electronics magazine- In-Phase.
 - Organized various talks by eminent personalities, professors and students- Prof. A.K Mallik- IIT Kanpur, Nvidia- CUDA, Matlab among others.
 - Successfully conducted events like fresher's party, farewell party etc. over the years.
 - Speaker in 1st year orientation, talks on internships, jobs, research groups etc.
2. **CORE TEAM, MARKETING**, TECHNICHE '08- Annual Techno-Management fest, IIT Guwahati (2008-2009)
Part of the 10 member core team to execute entire planning for one of the biggest technical fest of India.
 - Coordinated over a time span of a year to achieve a budget of around \$8000; twice of previous edition.
 - Negotiated sponsorship deals with corporate like Intel, Spice Jet, Matrix Cellular etc.
 - Concerted effort help to expand the popularity of Techniche in terms of participation, international lectures, sponsors etc. over the years.

REFERENCES AVAILABLE ON REQUEST