Rudrasis Chakraborty

Current Affiliation
Graduate Student, CISE
University of Florida, Gainesville
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EDUCATION

Graduate Student, Computer & Information Science & Engg.
University of Florida, USA   Aug. 2013 -
SUPERVISOR - Prof. Baba C. Vemuri
CGPA - 3.96

Master of Science, Mathematics
University of Florida, USA   Aug. 2015 -
CGPA - 4.00

Master of Technology, Computer Science & Engg.
Indian Statistical Institute, Kolkata, India   2010-2012
THESIS - Incorporating ϵ-dominance in MultiObjective Optimization : A study in AMOSA
SUPERVISOR - Prof. Sanghamitra Bandyopadhyay
Percentage 88.16 (1st class Distinction)

Bachelor of Engineering, Computer Science & Engg.
Jadavpur University, Kolkata, India   2006-2010
THESIS - Audio Classification
SUPERVISOR - Dr. Sanjoy Kumar Saha
CGPA 8.68 (1st class Hons.)

Publications

Legend: ■ Machine Learning, ■ Diff. Geometry, ■ Statistics, ■ Signal Processing, ■ Evolutionary Computation, ■ Computer Vision, ■ Medical Imaging

Publications during PhD

- "Statistics on the space of trajectories for Longitudinal data analysis", **Rudrasis Chakraborty**, Monami Banerjee and Baba Vemuri, in *IEEE International Symposium on Biomedical Imaging (ISBI)*, 2017 (Accepted) ■ ■ ■.

- "An efficient Exact-PGA algorithm for constant curvature manifolds", **Rudrasis Chakraborty**, Dohyung Seo and Baba Vemuri in *CVPR* 2016 (**Spotlight Oral Presentation**, *Acceptance Rate: 5.7%*) ■ ■ ■.

- "A nonlinear regression technique for manifold valued data with applications to Medical Image Analysis", Monami Banerjee, **Rudrasis Chakraborty**, Edward Ofori, Michael Okun, David Vaillancourt and Baba Vemuri in *CVPR* 2016 (*Acceptance Rate: 19.9%*) ■ ■ ■.

- "Recursive Frechet Mean Computation on the Grassmann and its Applications to Computer Vision", **Rudrasis Chakraborty** and B. Vemuri, *ICCV*, 2015. (*Acceptance Rate: 25.0%*) ■ ■ ■

- "An efficient recursive algorithm for atlas construction", **Rudrasis Chakraborty**, M. Banerjee, D. Seo, S. Turner, D. Fuller, J. Forder and B. Vemuri, *MICCAI workshop on Mathematical Foundations of Computational Anatomy (MFCA)*, 2015. ■ ■ ■

- "An efficient recursive estimator of the Fréchet mean on hypersphere with applications to Medical Image Analysis", H. Salehian, **Rudrasis Chakraborty**, E. Ofori, D. Vaillancourt and B. Vemuri, *MICCAI workshop on Mathematical Foundations of Computational Anatomy (MFCA)*, 2015. ■ ■ ■

- "Nonlinear regression on Riemannian manifolds and its applications to Neuro-image analysis", M. Banerjee, **Rudrasis Chakraborty**, D. Villiancourt, E. Ofori and B. Vemuri, *MICCAI*, 2015. (*Acceptance Rate: 31.1%*) ▪▪▪▪

Publications during Master

- "Sensor (Feature-Group) Selection with Controlled Redundancy in a Connectionist Framework", **Rudrasis Chakraborty**, C. T. Lin and Nikhil R. Pal in International Journal of Neural Systems, 24(6), 2014, *IF: 6.507.* ▪
- "A New Measure of Priority Based ϵ Dominance in Multiobjective Optimization", S. Bandyopadhyay, **Rudrasis Chakraborty** and U. Maulik in Information Sciences, 305, 2015, *IF: 4.038.* ▪
- "Feature Selection Using a Neural Framework with Controlled Redundancy", **Rudrasis Chakraborty** and Nikhil R. Pal in IEEE Transaction in Neural Network and Learning Systems, 26(1), 2015 *IF: 4.291.* ▪
- "Incorporating ϵ-dominance in AMOSA: Application to multiobjective 0/1 knapsack problem and clustering gene expression data", S. Bandyopadhyay, U. Maulik, **Rudrasis Chakraborty** in Applied Soft Computing, Vol. 13, No. 5, May 2013, 2405 - 2411 *IF: 2.810.* ▪

Publications during Bachelor

- "Perceptual Feature Based Song Genre Classification using RANSAC", A. Ghoshal, **Rudrasis Chakraborty**, B. Chanda Dhara, S. K. Saha in International Journal of Computational Intelligence Studies, 4(1), 2015. ▪
- "A hierarchical approach for speech-instrumental-song classification", A. Ghoshal, **Rudrasis Chakraborty**, B. Chanda Dhara, S. K. Saha in Springer Plus 2013, 2:526. ▪
- "Music Classification Based on MFCC Variants and Amplitude Variation Pattern: A hierarchical approach", A. Ghoshal, **Rudrasis Chakraborty**, B. Chanda Dhara, S. K. Saha in International Journal of Signal Processing, Image Processing and Pattern Recognition (IJSIP), Vol.5, No.1, March 2012. ▪
- "Genre Based Classification of Song Using Perceptual Features", A. Ghoshal, **Rudrasis Chakraborty**, B. Chanda Dhara, S. K. Saha in International Conference on Advanced Computing, Networking, and Informatics, 2013. ▪
- "Segmenting Web-Domains and Hashtags using Length Specific Models", S. Srinivasan, S. Bhattacharya, **Rudrasis Chakraborty** in 21st ACM International Conference on Information and Knowledge Management (CIKM), 2012. ▪
- "Song/Instrumental Classification using Spectrogram Based Contextual Features", A. Ghoshal, **Rudrasis Chakraborty**, B. Chanda Dhara, S. K. Saha in CUBE International Conference, 2012. ▪
- "Song Classification: Classical and Non-classical Discrimination using MFCC Co-occurrence Based Features", A. Ghoshal, **Rudrasis Chakraborty**, B. Chanda Dhara, S. K. Saha in International Conference of Signal Processing, Image Processing and Pattern Recognition (SIP), 2011. ▪
- "Automatic Identification of Instrument Type in Music Signal using Wavelet and MFCC", A. Ghoshal, **Rudrasis Chakraborty**, B. Chanda Dhara, S. K. Saha in Fifth International Conference on Information Processing (ICIP), 2011. ▪
- "Instrumental/Song Classification of Music Signal Using RANSAC", A. Ghoshal, **Rudrasis Chakraborty**, B. Chanda Dhara, S. K. Saha in 3rd International Conference on Electronics Computer Technology (ICECT), 2011. ▪
- "Speech/Music Classification Using Occurrence Pattern of ZCR and STE", A. Ghoshal, **Rudrasis Chakraborty**, R. Chakraborty, S. Haty, B. Chanda Dhara, S. K. Saha in 3rd International Conference on Intelligent Information Technology Application (IITA), 2009. ▪

COURSES COMPLETED

Introduction to Abstract Algebra I, Theoretical Statistics (I and II), Linear Algebra, Curves and Surfaces, Differential Geometry (I and II), Advanced Differential Geometry (I and II), Modern Analysis (I and II), Markov Chain Monte Carlo, Computer Vision, Medical Image Analysis, Pattern Recognition and Image Processing, Artificial Intelligence, Advanced Image Processing, Neural Networks

MEMBERSHIPS

Graduate Student Member of IEEE
SIAM Student Member
Student Member of CVF

AWARDS AND FELLOWSHIPS

Awarded CISE *Gartner Group Info Tech Scholarship* for good academic performance.
Awarded CISE travel grant to attend MICCAI 2015.
Graduate School Fellowship from University of Florida.
Gold Medal for best B.E Thesis in Jadavpur University.
Appear first in M.Tech Curriculum in Indian Statistical Institute.
ISIAA gold medal for standing first in M.Tech curriculum in Indian Statistical Institute.
Received award in forms of books in all the four semesters during M.Tech curriculum.
Awarded first prize in DST sponsored Image processing workshop held in Indian Statistical Institute, 2010.

PRESENTATION AND INVITED TALKS

- Invited talk in Indian Statistical Institute, Dec., 2015 on "An efficient way to compute Frechet mean on Riemannian manifold".

- Presented the work "Nonlinear regression on Riemannian manifolds and its applications to Neuro-image analysis" in MICCAI, 2015.

- Presented the work "An efficient recursive algorithm for atlas construction" in MICCAI sponsored workshop MFCA, 2015.

- Presented the work "An efficient recursive estimator of the Fréchet mean on hypersphere with applications to Medical Image Analysis" in MICCAI sponsored workshop MFCA, 2015.

INTERNSHIPS & WORK EXPERIENCES

Indian Statistical Institue, Kolkata	May 2009 – July 2009
Yahoo! R & D Labs, Bangalore	May 2011 – July 2011
Teaching Assistant of Data Structure using C++, University of Florida	August 2013 - Present