

# SAILESH CONJETI

## School Address

Chair for Computer Aided Medical Procedures & Augmented Reality  
Fakultät für Informatik  
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## Permanent Address

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## AREAS OF INTEREST

Medical Image Computing, Machine Learning, Image Registration, Image Retrieval, Biosignal Processing, Digital Pathology.

## EDUCATION and EXPERIENCE

### Doctoral Student

July 2014-present

Chair for Computer Aided Medical Procedures & Augmented Reality  
Fakultät für Informatik, Technische Universität München, Germany

- *Research Advisors:*
  - Prof. Nassir Navab, Technische Universität München, Germany.
  - Dr. Amin Katouzian, Technische Universität München, Germany.
- *Direction of Investigation:* Advanced machine learning methods for medical image computing.
- *Teaching:* Machine Learning In Medical Imaging (Praktikum - WS 2015), Machine Learning in Imaging and Visualization (Hauptseminar - SS 2015), Computer Aided Medical Procedures (Lecture - WS 2014).

### Master of Technology, Medical Imaging and Informatics

2012-2014

Indian Institute of Technology, Kharagpur, India

Fakultät für Informatik, Technische Universität München, Germany

- *Thesis:* Knowledge Propagation Models for Multi-modal Deformable Image Registration
- *Supervised by:* Prof. Nassir Navab, Technische Universität München, Germany, Prof. Jyotirmoy Chatterjee, Indian Institute of Technology, Kharagpur, India and Dr. Amin Katouzian, Technische Universität München, Germany.
- *Cumulative GPA:* Overall: **9.80/10.0** (University Silver Medalist)
- *Relevant Coursework :* Physics and Instrumentation for Medical Imaging, Advanced Digital Image Processing and Computer Vision, Pattern Recognition and Machine Intelligence for Medicine, Biomedical Instrumentation, Molecular Imaging, Soft Computing Applications, Digital Image Processing, MEMS and Bio-sensors, Biostatistics and Basic Human Anatomy, Physiology and Pathology.

### Bachelor of Engineering(Honors), Electrical and Electronics Engineering

2008-2012

Birla Institute of Technology and Science, Pilani, Rajasthan, India

- *Cumulative GPA:* Overall: **9.15/10.0** (Class-Distinction) Core: **9.87/10.0** (Top 5%)
- *Relevant Coursework :* Digital Signal Processing, Analog and Digital Electronics, Pattern Recognition and Image Processing, Electronic Devices and Integrated Circuits, Embedded Systems, Microprocessors and Interfacing, Computer Networking, Numerical Analysis, Optimization, Differential Equations and Advanced Engineering Mathematics .

### All India Secondary School Certificate Examination

2008

DAV Boys Senior Secondary School, Gopalapuram, Chennai, India

- *Cumulative Percentage:* **94.2%** (Class-Distinction)

## PROFESSIONAL AFFILIATIONS

Graduate Student Member, Institution of Electrical and Electronics Engineers (IEEE), Student Member, SPIE, Student Member, IEEE Engineering in Medicine and Biology Society (EMBS).

## RELEVANT SKILLS

- **Computing Platforms:** MATLAB R2009b (Communications, Curve Fitting, Filter Design, Fuzzy Logic, Image Processing, Neural Network, Statistics and System Identification Tool Box) , Simulink and Mathematica.
- **Neural Engineering Softwares:** BCI 2000,UCL Statistical Parametric Mapping (SPM) software for fMRI analysis.
- **Image Analytics Softwares:** Open CV, ImageJ, Insight Segmentation and Registration Toolkit(ITK), Carl Ziess Axiovision and Adobe Photoshop.
- **Statistical Tools:** SPSS, Origin, R and MS-Excel.
- **Programming Languages:** C, C++ and Java.
- **Other Packages:** L<sup>A</sup>T<sub>E</sub>X, Adobe Dreamweaver, PHP, MySQL, Weka 6.1, Intellisuite(MEMS Design Package), COMSOL, Code Composer Studio (CCS 2.0), Kiel uVision 4.0, NI Labview, MS-Office.

## REVIEWER

- IEEE Transactions on Medical Imaging, 2015.
- Medical Image Computing and Computer Assisted Interventions, 2015.
- Medical and Biological Engineering and Computing - Springer, 2014-15.
- IEEE Transactions on Intelligent Transportation Systems 2013-15.
- IEEE Intelligent Transportation Systems Society Conference (ITSC) 2012.

## PUBLICATIONS

Google Scholar Citation Indices: Citations: 47; h - index: 3; i10 - index: 2. (Accessed in: Sept., 2015.)

- **Thesis**

1. **S. Conjeti**, *Knowledge Propagation Models for Multi-modal Deformable Image Registration*, Graduate Research Thesis, Indian Institute of Technology, Kharagpur, May 2014.
2. **S. Conjeti**, *An Electromyography Based Strategy for Neuromuscular Assessment and Control of Elbow Joint Rehabilitative Orthosis*, Under Graduate Research Thesis, Birla Institute of Technology and Science Pilani, July 2012.

- **Journals**

1. **Roy, A. G., Conjeti, S.**, Carlier, S., Dutta, P., Kastrati, A., Laine, A. F., Navab, N., Katouzian, A., & **Sheet, D.** (2015). *Multiscale Distribution Preserving Autoencoders for Susceptible Plaque Detection in Intravascular Optical Coherence Tomography*. To be submitted: IEEE Transactions on Medical Imaging (*Manuscript under preparation*). Impact Factor: 3.39
2. **Conjeti, S.**, Mesbah, S., Rautenberg, P. L., Navab, N., & Katouzian, A. (2015). *Neuron-Miner: An Advanced Tool for Morphological Search and Retrieval in Neuroscientific Image Databases*. In Neuroinformatics (*Under Review*). Impact Factor: 2.825
3. **Conjeti, S.**, Katouzian, A., **Roy, A. G.**, Peter, L., **Sheet, D.**, Carlier, S., Laine, A. F., Navab, N. (2015). *Supervised Domain Adaptation of Decision Forests: Transfer of models trained in vitro for in vivo intravascular ultrasound tissue characterization*. In Medical Image Analysis (*Under Review*). Impact Factor: 3.654

4. **Roy, A. G., Conjeti, S.**, Carlier, S., Dutta, P., Kastrati, A., Laine, A. F., Navab, N., Katouzian, A., & **Sheet, D.** (2015, February). *Lumen Segmentation in Intravascular Optical Coherence Tomography using Backscattering Tracked and Initialized Random Walks*. In IEEE Journal of Biomedical and Health Informatics (*Early Access*). Impact Factor: 2.072
5. Anura, A., **Conjeti, S.**, Das, R. K., Pal, M., Bag, S., Paul, R. R., Ray, A.K., & Chatterjee, J. (2015, February). *Computer-aided quantitative interpretation to HIF-1 $\alpha$ , cMYC and p53 expression in oral submucous fibrosis*. In Radiotherapy and Oncology, 114, 59-60. Impact Factor: 4.363
6. Anura, A., **Conjeti, S.**, Pal, M., Paul, R. R., & Chatterjee, J. (2014, December). *Computer-Aided Molecular Pathology Interpretation in Exploring Prospective Markers for Oral Sub-mucous Fibrosis Progression*. In Journal of the Sciences of Head and Neck Cancer (*Early Access*). Impact Factor: 2.641
7. Barui, A., Banerjee, P., Chaudhary, A., **Conjeti, S.**, Mondal, B., Dey, S., & Chatterjee, J. (2014, September). *Evaluation of angiogenesis in diabetic lower limb wound healing using a natural medicine: A quantitative approach*. In Wound Medicine, 6, 26-33. Impact Factor: NA.
8. Bag, S., **Conjeti, S.**, Das, R. K., Pal, M., Anura, A., Paul, R. R., Ray, A.K., Sengupta, S., & Chatterjee, J. (2013). *Computational analysis of p63+ nuclei distribution pattern by graph theoretic approach in an oral pre-cancer (sub-mucous fibrosis)*. In Journal of Pathology Informatics, 4(1), 35. Impact Factor: NA.
9. Singh, R. R., **Conjeti, S.**, & Banerjee, R. (2013). *Assessment of Driver Stress from Physiological Signals collected under Real-Time Semi-Urban Driving Scenarios*. In International Journal of Computational Intelligence Systems, 7(5), 909-923. Impact Factor: 0.574.
10. Singh, R. R., **Conjeti, S.**, & Banerjee, R. (2013). *A comparative evaluation of neural network classifiers for stress level analysis of automotive drivers using physiological signals*. In Biomedical Signal Processing and Control, 8(6), 740-754. Impact Factor: 1.419
11. **Conjeti, S.**, & Rout, B. K. (2013). *Strategy for Electromyography Based Diagnosis of Neuromuscular Diseases For Assistive Rehabilitation*. In International Journal of Bioinformatics and Biosciences, 3(3), 25-39. Impact Factor: NA.

• **Conferences**

1. **Conjeti, S.**, Shah, A., Navab, N., & Katouzian, A., (2015). *Deeply learnt hashing forests for content based retrieval in prostate MR image databases*. In SPIE Medical Imaging 2015 (*Under Review*).
2. **Conjeti, S.**, Mesbah, S., Kumaraswamy, A., Rautenberg, P. L., Navab, N., & Katouzian, A. (2015). *Hashing forests for search and retrieval in neuroscientific image databases*. In Medical Image Computing and Computer-Assisted Intervention - MICCAI 2015 (Accepted - **Oral Presentation**).
3. Albarqouni, S., Baust, M., **Conjeti, S.**, Al-Amoudi, A., & Navab, N. (2015, September) *Multi-scale graph-based guided filter for de-noising cryo-electron tomographic data*. In British Machine Vision Conference (BMVC), Swansea, UK (Accepted).
4. **Conjeti, S.**, Yigitsoy, M., **Sheet, D.**, Chatterjee, J., Navab, N., & Katouzian, A. (2015, April). *Mutually coherent structural representation for image registration through joint manifold embedding and alignment*. In Biomedical Imaging (ISBI), 2015 IEEE 12th International Symposium on (pp. 601-604). IEEE.
5. **Conjeti, S.**, Yigitsoy, M., Peng, T., **Sheet, D.**, Chatterjee, J., Bayer, C., Navab, N. & Katouzian, A. (2015, April). *Deformable registration of immunofluorescence and histology using iterative cross-modal propagation*. In Biomedical Imaging (ISBI), 2015 IEEE 12th International Symposium on (pp. 310-313). IEEE. (**Oral Presentation**).
6. **Roy, A. G., Conjeti, S.**, Carlier, S. G., Konig, A., Kastrati, A., Dutta, P. K., Laine, A.F., Navab, N., **Sheet, D.**, & Katouzian, A. (2015, April). *Bag of forests for modelling of tissue energy interaction in optical coherence tomography for atherosclerotic plaque susceptibility assessment*. In Biomedical Imaging (ISBI), 2015 IEEE 12th International Symposium on (pp. 428-431). IEEE.

7. Peng, T., Wang, L., Bayer, C., **Conjeti, S.**, Baust, M., & Navab, N. (2014). Shading Correction for Whole Slide Image Using Low Rank and Sparse Decomposition. In Medical Image Computing and Computer-Assisted Intervention MICCAI 2014 (pp. 33-40). Springer International Publishing.
8. Kraft, S., **Conjeti, S.**, Noë, P. B., Carlier, S., Navab, N., & Katouzian, A. (2014). *Full-Wave Intravascular Ultrasound Simulation from Histology*. In Medical Image Computing and Computer-Assisted Intervention MICCAI 2014 (pp. 627-634). Springer International Publishing.
9. Sheet, D., Karri, S. P. K., **Conjeti, S.**, Ghosh, S., Chatterjee, J., & Ray, A. K. (2013, April). *Detection of retinal vessels in fundus images through transfer learning of tissue specific photon interaction statistical physics*. In Biomedical Imaging (ISBI), 2013 IEEE 10th International Symposium on (pp. 1452-1456). IEEE. (**Oral Presentation**).
10. Singh, R. R., **Conjeti, S.**, & Banerjee, R. (2012, February). *Biosignal based on-road stress monitoring for automotive drivers*. In Communications (NCC), 2012 National Conference on (pp. 1-5). IEEE. (**Oral Presentation**).
11. **Conjeti, S.**, & Jetwani, D.P. (2012, January). *Patient identification using high-confidence wavelet based Iris Pattern recognition*. In Biomedical and Health Informatics (BHI), 2012 IEEE-EMBS International Conference on (pp. 628-631). IEEE.
12. **Conjeti, S.**, Singh, R. R., & Banerjee, R. (2012, January). *Bio-inspired wearable computing architecture and physiological signal processing for on-road stress monitoring*. In Biomedical and Health Informatics (BHI), 2012 IEEE-EMBS International Conference on (pp. 479-482). IEEE. (**Oral Presentation**).
13. Singh, R. R., **Conjeti, S.**, & Banerjee, R. (2011, October). An approach for real-time stress-trend detection using physiological signals in wearable computing systems for automotive drivers. In Intelligent Transportation Systems (ITSC), 2011 14th International IEEE Conference on (pp. 1477-1482). IEEE. (**Oral Presentation**).

## HONORS

- Won **Synapse Prostate Dream Cancer Subchallenge 1b** for best performing machine learning models to improve the prediction of survival and toxicity of docetaxel treatment in patients with metastatic castrate resistant prostate cancer (mCRPC), August 2015.
- Awarded **Institute Silver Medal** from Indian Institute of Technology Kharagpur, for best academic performance in Post Graduate Course in Medical Imaging and Informatics, July 2014.
- Awarded **Deutscher Akademischer Austauschdienst (DAAD) Scholarship** to pursue Master's Thesis at Chair for Computer Aided Medical Procedures & Augmented Reality, Fakultät für Informatik, Technische Universität München, Germany from September 2013 to March 2014.
- Awarded **Travel Scholarship** to attend the IMI ICERM Joint Winter School on Computational Aspects of Neural Engineering at Indian Institute of Science, Bangalore in December 2012.
- Awarded **Ministry of Human Resources and Development, Government of India Scholarship** for pursuing graduate studies in Medical Imaging and Informatics after qualifying Graduate Aptitude Test in Engineering. (Percentile:99.81 % among 1,10,125 candidates)
- **Best Outgoing Student of the Year 2012** awarded by the Department of of Electrical and Electronics Engineering, BITS Pilani for Overall Excellence.
- Awarded **BITSAA IRU Research Travel Grant**, 2012 for attending the IEEE EMBS BHI 2012, Shenzhen, China.
- **Finalist amongst 192 papers** for the Best Student Paper Award at the IEEE EMBS BHI 2012, Shenzhen, China.
- Awarded **National Talent Search(NTS) Scholarship** by National Council for Education, Research and Training(NCERT) for scholastic excellence in 2007.
- Awarded **Best Student Award for All-round performance** by Lions Club, Chennai, in 2006.

## **REFERENCES**

1. Prof. Dr. Nassir Navab, Professor, Chair for Computer Aided Medical Procedures & Augmented Reality, Technische Universität München- *E-mail*: navab@cs.tum.edu.
2. Dr. Amin Katouzian, Senior Research Scientist, Chair for Computer Aided Medical Procedures & Augmented Reality, Technische Universität München, *E-mail*: amin.katouzian@cs.tum.edu.
3. Prof. Dr. Jyotirmoy Chatterjee, Associate Professor, School of Medical Science and Technology, Indian Institute of Technology Kharagpur *E-mail*: jchatterjee @ smst.iitkgp.ernet.in.
4. Dr. Debdoot Sheet, Assistant Professor, Department of Electrical Engineering, Indian Institute of Technology Kharagpur *E-mail*: debdoot@ee.iitkgp.ernet.in.