Current Address:
Room No:H 203
Gautham Bhavan
Amrita Vishwa
Vidyapeetham
Coimbatore-641112

Mobile No.:
09500823956

e-mail:
sachinnme@gmail.com

Competencies
-Patient Listener
-Executing task under pressure
-Good communication skills
-Self motivated

Personal Data:
DOB : 20.05.1985
Sex : Male
Nationality : Indian
Marital Status : Single

SACHIN KUMAR S

Career Objective:

Looking forward for job role which applies machine learning or cognitive computing to find solutions to the problems associated with NLP/Text Mining, Image and Speech related tasks

Academic Profile: CGPA/Perc.

PhD Student, CEN, (since Aug 2013)
Amrita Vishwa Vidyapeetham

M.Tech in **Computational Engineering and Networking**
Amrita Vishwa Vidyapeetham, 2010-2012 **8.2/10**

B.Tech in I**nformation Technology**
Kerala University, 2003-2007 **66 %**

Plus2 in Science (Biology Major) stream,
Kerala HSE Board (St. Michael's AIHSS, Kannur), 2001-2003 **81 %**

SSLC
Kerala HSE Board (St. Michael's AIHSS, Kannur), 2001 **80.05 %**

Internships:

Junior Research Associate
Sept 2011 to Feb 2012
Centre for Excellence in Computational Engineering and Networking,
Amrita Vishwa Vidyapeetham, Coimbatore

Intern
Feb 13 to 29, 2012
Biomedical and Speech Technology Lab
IIT Guwahati

Research Areas:

Machine Learning, Natural Language Processing, Optimization based Signal and Image Processing, Cyber Physical Systems, Computational Thinking through Spreadsheet and Scratch, Internet Of Things(IOT) for Agriculture

Academic Projects

B. Tech
- Voice based Railway Enquiry System

M. Tech
- Corpus Driven Malayalam Text-to-Speech Synthesis
- Detection of Voiced/Unvoiced portion in Malayalam speech syllables using Total Variation and Overcomplete Dictionary
- Hindi Character Segmentation in Document Images using Level Set Method and Diffusion
- A Study on Isolated Malayalam Digit Recognition using MFCC-GMM, BFCC-GMM, SVM and Learned Dictionary

Permanent Address:
Sreenelayam,
Bank Road,
Eachur PO,
Kannur

Linguistic Ability:
English
Hindi
Malayalam

Hobbies:
-Indoor games & swimming
- Music: playing and Listening
-Painting
-Traveling

Professional Experience:

Research Assistant
April 2015 - till date
Amrita Centre for Cyber Security, Amrita Vishwa Vidyapeetham, Amritapuri

Research Associate
August 2012 – March 2015
Centre for Excellence in Computational Engineering and Networking
Amrita Vishwa Vidyapeetham, Coimbatore

Junior Research Associate
Sept 2011 – Feb 2012
Centre for Excellence in Computational Engineering and Networking
Amrita Vishwa Vidyapeetham, Coimbatore

Junior Training Officer
August 2009 – November 2009
Centre for Corporate Relations, Amrita Vishwa Vidyapeetham, Amritapuri

Software Engineer
August 2007 – July 2009
Amrita Elearning Research Initiatives, Amrita Vishwa Vidyapeetham, Amritapuri

Skills:

Operating System	-Windows and Ubuntu
Programming Language	-Java, Action Script (2 & 3), Python, C, C++ Scala, HTML
Application software	-Matlab, Latex, MS Tools
Libraries	-LibSVM, GURLS, Tensorflow, Keras, scikit-learn, Mallet, Standford Core NLP, NLTK, Gensim, Weka, MIT Scratch
AI skills	-Theoretical know-how of linear algebra, modern convex and non-convex optimization, familiarity in probability, statistical and calculus approaches, deep learning approaches for text, image and speech, traditional machine learning approaches

Industry Oriented Courses:

- 4 Semester Cisco's Academic course on CCNA, 2007
- Course on Java from NIIT, 2009

Co-curricular Activities:

Organized National Level workshop on **ADVANCED OPTIMIZATION AND DEEP LEARNING TECHNIQUES**

Co-organized National Level Workshop on **SOFTWARE DEFINED RADIO FOR REAL TIME COMMUNICATION AND SIGNAL PROCESSING**

Organized National Level workshop on **COMPUTATIONAL LINGUISTICS AND MACHINE TRANSLATION**

Co-organized and handled practical classes for participants on the subject **The Efficient formatting with the aid of LATEX** in the first national workshop on **SPARSE IMAGE AND SIGNAL PROCESSING (SISP-2011)**

Volunteer in social service activities organized by **MATA AMRITANANDAMAYI MATH** and **SRI SATHYA SAI TRUST**

Member of team which conducted a workshop in **FRACTALS FOR HIGH SCHOOL STUDENTS**, at NIT Calicut, 2011

Sessions:

Sessions on "**Linear Algebra and Optimization for Machine Learning**" to MTech and Research students

Session on "**Deep Learning**" for Research groups

Sessions on "**Machine Learning**" for Research groups from Industry, Academics & Govt, in the period 2015 - 2016

Attended and assisted Dr. K. P. Soman for a talk on "**Biomedical Image Processing**" at PSG College of Technology, April 2014, Coimbatore

Attended and assisted Dr. K. P. Soman for a talk on "**Data Mining and Machine Learning**" at Rajagiri School of Engineering, Ernakulam, Kerala, April 2014

Attended and assisted Dr. K. P. Soman for the FDP programme on "**Emerging research Avenues in Signal and Image Processing**" lecture titled "Wavelets for Signal and Image Processing" on Oct 23, 2013, at PSG College of Technology, Coimbatore (conducted by Dept of ECE)

Attended and assisted Dr. K. P. Soman for the FDP programme on "**Wireless Technologies for Modern Medical Equipments**" on Nov 18, 2013, at PSG College of Technology, Coimbatore (conducted by Dept of Biomedical Engineering)

Attended and assited Dr. K. P. Soman and Dr. M. Anand Kumar for the programme on "**Introduction to Translation**" at Central Institute of Indian Languages - Mysore, in delivering a one day session titled "Machine Translation", dated Dec 16, 2013. Gave a project demonstration of "Hindi Machine Translation System".

Declaration

I hereby declare that the above-mentioned details are correct up to my knowledge and I bear the responsibility for the correctness of the above-mentioned particulars.

Place : Coimbatore
Date: (Sachin Kumar S)

Publications:

Book

1. **Modern Signal Processing with Linear Algebra and Optimization: Vol 1 – Linear Algebra for Signal Processing** *(online draft – www.nlp.amrita.edu/MSP)*

Journals:

1. **Salient Region Detection and Object Segmentation in Color Images using Dynamic Mode Decomposition**, *Journal of Computational Science-Elsevier*, 2017 (accepted)
2. **Detecting Android Malware using Long Short-term Memory**, *Journal of Intelligent and Fuzzy Systems*, 2017 (accepted)
3. **Evaluating Deep Learning Approaches to Characterize and Classify the DGA at Scale**, *Journal of Intelligent and Fuzzy Systems*, 2017 (accepted)
4. **Deep learning based Malayalam Twitter POS Tagger** (under review)
5. **Sentiment Analysis on Malayalam Twitter data using LSTM and CNN** (under submission)
6. **Character-level Malayalam Twitter POS Tagger using LSTM, GRU and CNN** (under submission)
7. **A Synchrosqueezed Approach for Power Line Interference Removal in ECG Signals** (under submission)
8. **Resolving Polysemy in Malayalam Verbs,** *Language in India***,** vol. 17, 2017
9. **A Simplified Exposition of Sparsity Inducing Penalty Functions for Denoising,** *ISTA 2016, Springer Series book chapter*, 2016
10. **A Fast and Efficient Framework for creating Parallel Corpus**, *IJST*, 2016
11. **Experimental Analysis of Malayalam POS Tagger using Epic Framework in Scala**, *ARPN Journal of Engineering and Applied Sciences*, 2016
12. **Power Quality Signal Classification using Convolutional Neural Network**, *IJCTA*, 2016
13. **Modified Variational Mode Decomposition for Power Line Interference Removal in ECG Signals,** *IJECE,* 2015
14. **Novel SVD based Character Recognition Approach for Malayalam Language Script,** *Recent Advances in Intelligent Systems and Computing, Springer*, Vol 235, pp 435-442, Jan 2014
15. **Enhancing Bregmanised NLTV Image Denoising using Savitzky Golay Filter and SVD,** *International Journal of Scientific & Engineering Research*, Volume 4, Issue 1, Jan 2013
16. **Directional Total Variation Filtering Based Image Denoising Method,** *International Journal of Computer Science* , Vol 9, Issue 2, March 2012.
17. **Insight into Primal Dual Augmented Lagrangian Multiplier Method,** *International journal of Computer Science and Information Technology & Security*, March 2012
18. **Hindi Character Segmentation in Document Images using Level set Methods and Non-linear Diffusion**, *International Journal of Computer Applications* , 44(16):42-49, April 2012.

19. **A Performance Study on Detection of Hypernasality in Children using MFCC, BFCC and various orders of GMM classifier**, *International Journal of Computer Science and Information Technology & Security*, Vol 2, No 3, June 2012
20. **Active Contour based Document Image Segmentation and Restoration using Split-Bregman and Edge Enhancement Diffusion,** *International Journal of Computer Applications*, Vol 54, No 13, Sept 2012
21. **Speech Enhancement based on Savitzky-Golay Smoothing Filter**, *International Journal of Computer Applications* 57(21):39-44, November 2012
22. **A Two Stage Algorithm for Denoising of Speech Signal,** IOSR *Journal of Computer Engineering*, Vol 8, pp 48-53, Dec 2012
23. **Computational Thinking with Spreadsheet: Convolution, High-Precision Computing and Filtering of Signals and Images**. *International Journal of Computer Applications* 60(19):1-7, December 2012
24. **Corpus Driven Malayalam Text-to-Speech Sysntesis for Interactive Voice Response System,** *International Journal of Computer Applications*, Vol 29, No 4, Sept 2011

Conferences:

1. **DEFT 2017 – Text Search @ TALN/RECITAL 2017 : Deep Analysis of Opinion and Figurative language on Tweets in French**, *TALN/RECITAL* 2017 (accepted)
2. **Deep Emotion Intensities in Tweets**, *EMNLP-WASSA*, 2017 (accsepted)
3. **A Novel Cyclic Convolution based Regurlarization Method for Power-line Interference Removal in ECG Signal**, *ICACCI-SIRS*, 2017 (accepted)
4. **Denoising of Phoncardiogram signals using Variational Mode Decomposition**, *ICACCI,* 2017 (accepted)
5. **Deep Stance and Gender Detection in Tweets on Catalan Independence@IBEREVAL,** ***IBEREVAL 2017***, (accepted)
6. **Denoising and Segmenting High Noise Phonocardiogram Signals using Group Sparsity**, PReMI, 2017 (under review)
7. **An L1 norm based Optimization Approach for Power Line Interference Removal in ECG Signals**, *ICACNI 2016*, Springer, 2016
8. **Real-Time Automotive Engine Fault Detection and Analysis Using BigData Platforms**, *FICTA* 2016
9. **Total Variation Denoising based Approach for R-peak Detection in ECG Signals,** *ICACC 2016, Elsevier Procedia Computer Science*, 2016
10. **Text/Image Region Separation for Document Layout Detection of Old Document Images using Non-linear Diffusion and Level Set,** *ICACC 2016, Elsevier Procedia Computer Science*, 2016

11. **Image Fusion Using Variational Mode Decomposition,** *ICIIECS*, 2016 (Scopus)
12. **Multicomponent Fault Diagnosis using Statistical Features and Regularized Least Squares,** *International Conference on Innovations in Information, Embedded and Communication Systems*, IEEE, 2015
13. **Accurate Frequency Estimation method based on Basis approach and Emperical Wavelet Transform,** *International Conference on Computer and Communication Technologies, Springer Conference, Vol 380, pp 801-809,* 2015
14. **Condition Monitoring in Roller Bearings using Cyclostationary Features**, *WCI, pp 690-607,* 2015
15. **Variance based offline Power Disturbance Signal Classification using Support Vector Machine and Random Kitchen Sink**, *International conference on SMART GRID Technologies*, Elseiver, 2015
16. **A VMD based approach for Speech Enhancement**, *SIRS*, 2015
17. **AMRITA_CEN-NLP@SAIL2015: Sentiment analysis in indian language using regularized least square approach with randomized feature learning,** *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, Springer Verlag, Volume 9468, Hyderabad India, p.671-683 (2015) (Scopus)
18. **Apache Spark a Big Data Analytics Platform for Smart Grid**, *Smart Grid Technologies, Elsevier Procedia Technology*, 2015
19. **Self-sufficient Smart Prosumers of Tomorrow,** *Smart Grid Technologies, Elsevier Procedia Technology,* 2015
20. **Convolutional Neural Network for the Recognition of Malayalam Characters,** *International Conference on Frontiers of Intelligent Computing, Springer,* Vol 328, pp 493-500, 2014(Scopus)
21. **OCR of printed Malayalam document using Singular Value Decomposition and Euclidian Distance Measurement,** *International Conference on Signal and Speech Processing, Elsevier conference*, 2014
22. **Deep Model for Hyperspectral Image Classification using Restricted Boltzman Machines**, *International Conference on Interdisciplinary Advances in Applied Computing, ACM-Sig Conference*, *2014*
23. **Performance comparison of VMD over EWT for the classification of power quality disturbances using SVM,** *International Conference on information and communication Technologies,* Elsevier Procedia Computer Science, 2014
24. **A low cost implementation of multi-label classification algorithm using Mathematica on Raspberry Pi,** *International Conference on information and communication Technologies,* Elsevier Procedia Computer Science, 2014
25. **Spike Detection of Disturbed Power Signal using VMD,** *International Conference on information and communication Technologies,* Elsevier Procedia Computer Science, 2014

26. **2D Image Data Approximation using Savitzky-Golay Filter – Smoothing and Differencing,** *International Conference on Automation, Computing, Communication, Control and Compressed Sensing (iMac4s), IEEE Xplore*, PP 365-371, June 2013
27. **Comparative Study of Recent Compressed Sensing Methodologies in Astronomical Images,** *Eco-friendly Computing and Communication Systems Communication in Computer and Information Science (**Springer**)*, Vol 305, pp 108-116, 2012
28. **A Robust Watermarking method based on Compressed Sensing and Arnold Scrambling,** *International Conference on Machine Vision and Image Processing (IEEE Xplore)*, pp 105-108, 2012