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Manjunath K E

CONTACT INFORMATION

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EDUCATION

Ph.D in Data Visualization and Computer Graphics.
International Institute of Information Technology, Bangalore, India. Jan 2015 –

MS (By research) in Information Technology. CGPA : 9.39
Indian Institute of Technology, Kharagpur - 721302, India. July 2012 – December 2014

Bachelor of Engineering in Computer Science and Engineering. Aggregate : 71.20%
Siddaganga Institute of Technology, Tumakuru - 572102, India. June 2005 – July 2009

XII Aggregate : 86.16%
Vidyavahini PU college, Tumakuru - 572102, India. 2003 – 2005

X Aggregate : 72.96%
Sri SatyaSai PU College, Sri SathyaSai Grama, Muddenahalli. 2002 – 2003

SYNOPSIS

- 2.5 years of IT experience.
- Research experience of 2.8 years in speech recognition.
- Developed speech recognition systems using HMMs and Neural networks.
- Hands-on experience in using HTK and Quicknet toolkits.
- Good knowledge and experience in C, C++.
- Good knowledge in Linux Shell scripting, Python and Matlab.
- Experience in Database (RDBMS, SQL) and ATH scripting.
- Basic knowledge of Perl and Ruby on Rails scripting.
- Good knowledge of using Linux OS (Ubuntu, Redhat, Opensuse, Fedora).
- Worked in Agile software development methodologies.
- Good knowledge on telecom fraud management.
- Exposure to iReports tool and Diamond xml.

TECHNICAL SKILLS

Research Interests: Data Visualization, Computer Graphis, Speech Recognition and Machine Learning.
Programming and Scripting Languages: C, C++, Python, Matlab, Bash shell scripting and SQL.
Technologies: Object Oriented Design, Data structures and algorithms, DataBase Management System, Agile methodology and Speech Processing.
Tools: HTK, Quicknet, GDB, Valgrind, Latex, Subversion, Clear Case and VMware,Vpnclient, Filezilla, Winscp.

PROFESSIONAL EXPERIENCE

Senior Scientific Officer April 2012 – December 2014
Sponsored Research and Industrial Consultancy, IIT Kharagpur, India.

Job profile: Research in speech recognition.
Important Contributions:
- Development of speech recognition systems for Bengali, Odia and English.
- Improvement of performance of speech recognition systems using articulatory and excitation source features.

Software Engineer April 2011 – March 2012
Subex Limited, Bangalore, India.
Job profile: Maintenance of telecom fraud management system, Handling real time issues on production machines, Requirements gathering, Development of customizations to meet client requirements, Providing bug fixes.
Important Contributions:
- Development of *recharge records summary* generator.
- Development of *corridor promotion policy* to validate free calls.
- Automation of addition of new sub-partitions to the existing partitions.
- Development of generic reports for both English and Polish languages using *iReports*.

Assistant System Engineer November 2009 – April 2011
Tata Consultancy Services, Hyderabad, India.
Job profile: Development of testing tools, Development of test cases, Functional testing, Bug detection, Automation of test cases.
Important Contributions:
- Development of *Memory leak tool* used for stress testing.
- Testing of *IO subsystem* of a telecom switch.
- Automation of testing using *ATH scripting*.

Personal Achievements

- Received *On the Spot Award* from Tata Consultancy Services.
- Certified as *Analyst in Telecom Domain* by Tata Consultancy Services.
- Representative for a team of 35 members during *initial learning program* of TCS.

Academic Project

Articulatory and Excitation Source Features for Phone Recognition : Most of the state-of-the-art *speech recognition systems* are developed using spectral features. But, the production of each sound unit is characterized by articulatory and excitation features in addition to spectral features. Hence, the performance of *speech recognition systems* can be significantly improved with the use of articulatory and excitation source features along-with the spectral features. Major contributions are listed below.

1. Methods are proposed to derive the articulatory and excitation source features from spectral features.
2. The development of *phone recognition systems* using combination of spectral and articulatory features is proposed.
3. The development of *phone recognition systems* using combination of spectral and excitation source features is proposed.
4. The articulatory and excitation source features are analyzed across read, extempore and conversation modes of speech.

Conferences

- 16^{th} IEEE International Oriental COCOSDA (OCOCOSDA-2013), New Delhi, India.
- 20^{th} IEEE National Conference on Communications (NCC-2015), Kanpur, India.
- 2^{nd} International Conference on Advanced Computing, Networking, and Informatics (ICACNI-2014), Kolkata, India.
- IEEE International Conference on Signal Processing and Communication Engineering Systems (SPACES-2015), Vijayawada, India.

Journal

1. **Manjunath K E** and K. Sreenivasa Rao, "Source and System Features for Phone Recognition", *International Journal of Speech Technology, (Springer)*, pp. 1–14, 2014.
2. **Manjunath K E** and K. Sreenivasa Rao, "Improvement of Phone Recognition Accuracy using Articulatory Features", *Applied Soft Computing, (Elsevier),* (Under Review).

Conference

1. **Manjunath K E**, K. Sreenivasa Rao, and Debadatta Pati, "Development of Phonetic Engine for Indian languages : Bengali and Oriya", in *16^{th} IEEE International Oriental COCOSDA (OCOCOSDA-2013)*, (Gurgaon, India), Nov. 2013.
2. R Ravi Kiran, Sunil Kumar. S.B, **Manjunath K E**, Biswajit Satapathy, Apoorv Chaturvedi, Debadatta Pati, and K Sreenivasa Rao, "Automatic Phonetic and Prosodic Transcription for Indian Languages : Bengali and Odia", in *10^{th} International Conference on Natural Language Processing (ICON-2013)*, (New Delhi, India), Dec. 2013.
3. **Manjunath K E** and K. Sreenivasa Rao, "Automatic Phonetic Transcription for Read, Extempore and Conversation Speech for an Indian Language: Bengali", in *20th IEEE National Conference on Communications (NCC-2014)*, (Kanpur, India), Feb. 2014.
4. **Manjunath K E**, K. Sreenivasa Rao, and Gurunath Reddy M, "Two-Stage Phone Recognition System using Articulatory and Spectral Features", in *IEEE International Conference on Signal Processing and Communication Engineering Systems (SPACES-2015)*, (Vijayawada, India), Jan. 2015.
5. **Manjunath K E**, K. Sreenivasa Rao, and Gurunath Reddy M, "Improvement of Phone Recognition Accuracy using Source and System Features", in *IEEE International Conference on Signal Processing and Communication Engineering Systems (SPACES-2015)*, (Vijayawada, India), Jan. 2015.
6. **Manjunath K E**, Sunil Kumar. S. B, Debadatta Pati, Biswajit Satapathy, and K. Sreenivasa Rao, "Development of consonant-vowel recognition systems for Indian languages : Bengali and Odia", in *10^{th} IEEE India Conference on Emerging Trends and Innovation in Technology (INDICON-2013)*, (Bombay, India), Dec. 2013.
7. Piyush Kumar P. Singh, **Manjunath K E**, R Ravi Kiran, Jainath Yadav, and K Sreenivasa Rao, "Indexing and Retrieval of Speech Documents", in *2^{nd} International Conference on Advanced Computing, Networking, and Informatics (ICACNI-2014)*, (Kolkata, India), Jul. 2014.
8. Manav Bhaykar, K. Sreenivasa Rao, and **Manjunath K E**, "Speaker Independent Emotion Recognition from Speech using Combination of Different Classification Models", in *18^{th} World Multi-Conference on Systemics, Cybernetics and Informatics (WMSCI-2014)*, (Florida, USA), Jul. 2014
9. Gurunath Reddy M, Harikrishna D. M, K. Sreenivasa Rao, and **Manjunath K E**, "Telugu Emotional Story Speech Synthesis using SABLE Markup Language", in *IEEE International Conference on Signal Processing and Communication Engineering Systems (SPACES-2015)*, (Vijayawada, India), Jan. 2015.
10. Gurunath Reddy M, Procheta Sen, **Manjunath K E**, Arup Dutta, Arijul Haque, Parakrant Sarkar, and K. Sreenivasa Rao, "Automatic pitch accent contour transcription for Indian Languages", in *IEEE International Conference on Computer Communication and Control (IC4-2015)*, (Indore, India), Sept. 2015.