

Sreecharan Sankaranarayanan

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Language Technologies Institute, Carnegie Mellon University, Pittsburgh, PA - 15213

EDUCATION

CARNEGIE MELLON UNIVERSITY

PH.D. IN LANGUAGE AND INFORMATION TECHNOLOGY

2015 - 2020 (Expected) | Pittsburgh, PA, USA

CGPA: 3.80/4

NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA, SURATHKAL

B.TECH IN COMPUTER ENGINEERING

2011 - 2015 | Mangalore, India

CGPA: 9.38/10

- Ranked 4 in a batch of 106.

VVS SARDAR PATEL PU COLLEGE

SECOND YEAR PRE-UNIVERSITY EXAMINATION

Graduated May 2011 | Bangalore, India

Percentage: 94.67%

- Received the Institute Merit Award for highest total score of 594/600 in the First Year Pre-University Examination.

SINDHI HIGH SCHOOL, HEBBAL

SECONDARY SCHOOL EXAMINATION

Graduated May 2009 | Bangalore, India

Percentage: 97.2%

- Ranked 3rd among all Secondary School students from the state of Karnataka, India for procuring 97.2% in the Secondary School Examination 2009.
- Among top 0.1% of the passing candidates in the Secondary School Examination 2009.
- Selected to participate in the CSIR Program on Youth for Leadership in Science (CPYLS). The program was conducted by the Council for Scientific and Industrial Research (CSIR) to encourage students to pursue research in domains of their interest.

PROFESSIONAL/RESEARCH EXPERIENCE

LANGUAGE TECHNOLOGIES INSTITUTE | DANCE CO-DIRECTOR

January 2017 – Present | Carnegie Mellon University, Pittsburgh, PA, USA

- Discussion Affordances for Natural Collaborative Exchange (DANCE) is a satellite working group of the edX platform. (dance.cs.cmu.edu)
- Organized the DANCE Talk Series that invited researchers from across the world to present talks relevant to the group's interests.
- Built a Discussion Forum XBlock that allows the integration of collaborative features into platforms that run on Open edX.

LANGUAGE TECHNOLOGIES INSTITUTE | GRADUATE RESEARCH ASSISTANT

August 2015 – Present | Carnegie Mellon University, Pittsburgh, PA, USA

- Working with Carolyn Penstein Rosé on conversational agents and computer-supported collaborative learning applications for them.

EDX | SOFTWARE ENGINEERING INTERN

August 2016 – December 2016 | Cambridge, MA, USA

- Worked on a scalable, generic infrastructure for supporting the delivery of notifications across channels like email, browser app, mobile app and push. (github.com/edx/notifications)
- Built a machine learning framework for the automated detection of community teaching assistant candidates in online courses.
- Built "X", the edX concierge bot on Facebook Messenger for recommending courses after learning the user's interests.

TECHNISCHE UNIVERSITAT DARMSTADT | SUMMER RESEARCH INTERN

May 2015 – August 2015 | Darmstadt, Germany

- Received the DAAD WISE scholarship to pursue an internship under Dr. Ulf Brefeld at the Knowledge Mining and Assessment group.
- Worked in association with DIPF Frankfurt on the automatic generation of cloze questions for language proficiency assessment.

UNIVERSITY OF QUEENSLAND | SUMMER RESEARCH SCHOLAR

December 2014 - January 2014 | Brisbane, Australia

- Worked under Dr. Susan Rowland, an education focused researcher at the School of Chemistry and Molecular Biosciences, University of Queensland, St. Lucia Campus.
- Assisted with text mining and data representation of student reflections before and after listening to podcasts from the "Free Energy Project".
- The "Free Energy Project" interviewed successful scientists about their career pathways. Their motivation and personality traits were analyzed. Students were then asked to listen to these podcasts. Their perception before and after listening to the interviews were analyzed and reported.

INDUSTRIAL TECHNOLOGY RESEARCH INSTITUTE | SOFTWARE ENGINEERING INTERN

May 2014 - July 2014 | Hsinchu, Taiwan

- Worked in the Applications Division of the Cloud Computing Center for Mobile Applications (CCMA) on the Social Opinion Analysis Platform (SOAP).
- The project was aimed at performing Natural Language tasks on the Traditional Chinese language. The platform has 5 pluggable components and performs information gathering, natural language processing, query expansion, lemmatisation and indexing. The results could be accessed as a web service.
- Worked on the team as the crawler leveraging BeautifulSoup and urllib in Python and assisted as a linguist leveraging Stanford NLP. Succeeded in providing a first-cut Traditional Chinese NLP engine.

GLOBAL TOUCHPOINTS INC. | DATA SCIENCE INTERN

May 2014 - July 2014 | Work from Home

- Worked on a project consulting for the startup GOQii.
- The objective of the project was to build a Motivation Mining Engine to determine the motivation of device users from various indicators collected by both the device and the associated application.
- Was involved in feature selection, model development and design, model evaluation, feature re-engineering and model validation. Succeeded in providing a first-cut User Motivation Mining Model.

UBIQUITOUS LEARNING RESEARCH LAB | RESEARCH ENGINEER + DATA SCIENTIST

November 2013 - May 2015 | National Institute of Technology Karnataka, Surathkal, India

- The Ubiquitous Learning Research Lab was a multi-disciplinary group that focused on designing and developing educational technologies for use on campus. The lab had collaborations with researchers from Carnegie Mellon University, Microsoft Research, Xerox Research and Google.
- Worked on the Open Collaborative Learning (OCL) Platform which was an in-house platform developed for hosting locally relevant online courses for students on campus leveraged off OpenEdX. It also served as a means to collect data for research.
- A framework for determining optimal pairs of course participants for pair programming called Peer Assisted Learning (PAL) was developed using the data collected by the platform.

MUSIC AND AUDIO RESEARCH GROUP | UNDERGRADUATE RESEARCHER

April 2013 - May 2015 | National Institute of Technology Karnataka, Surathkal, India

- The Music and Audio Research Group was a research group that focused on Music Information Retrieval and Music Signal Processing particularly for Indian Classical Music.
- Worked on Machine Learning approaches to Indian Classical Music Transcription. Initial investigations into transcription using support vector machines produced an accuracy of 92%. The process has since been refined to be reproducible and cover many more ragas.

INDIAN INSTITUTE OF TECHNOLOGY, MADRAS | SUMMER INTERN

May 2013 - July 2013 | Chennai, India

- Worked under Dr. C. Pandu Rangan in the theory group on Provably Secure Aggregate Signcryption Schemes.
- The work undertaken entailed a literature survey on various aggregate signcryption schemes to ascertain their relative advantages.

COMPLEMENTARY EXPERIENCE

**CARNEGIE MELLON UNIVERSITY | PROGRAM IN INTERDISCIPLINARY EDUCATION RESEARCH (PIER)
ASSOCIATE**

August 2016 – Present | Pittsburgh, PA, USA

- Accepted as an associate into the IES-sponsored Program in Interdisciplinary Education Research. (cmu.edu/pier)
- Completed a course sequence that provided exposure to scientific research in education.

MICROSOFT INDIA | MICROSOFT STUDENT PARTNER

May 2014 - May 2015 | National Institute of Technology Karnataka, Surathkal, India

- Charged with the development of apps and demonstrations for Microsoft's latest technologies, representing my university at Microsoft events and connecting with like-minded students and faculty from around the world.

IAFOR ACTC 2015 | SENIOR REVIEWER

December 2014 | Kobe, Japan

- Was provided an opportunity to review abstracts submitted to the IAFOR ACTC 2015 conference as part of a reciprocal system instituted, encouraging authors of accepted papers to contribute as reviewers. A senior reviewer is credited with reviewing 6 or more abstracts.

IAFOR ACE/ACSET 2014 | SENIOR REVIEWER

May 2014 | Osaka, Japan

- Was provided an opportunity to review abstracts submitted to the IAFOR ACE 2014 and the IAFOR ACSET 2014 conferences as part of a reciprocal system instituted, encouraging authors of accepted papers to contribute as reviewers. A senior reviewer is credited with reviewing 6 or more abstracts.

IEEE BANGALORE SECTION STUDENT ACTIVITIES COMMITTEE (SAC) 2014 | MANGALORE HUB LEADER

March 2014 - March 2015 | Mangalore, India

- The Student Activities Committee (SAC) coordinates interaction among various student branches of IEEE.
- Charged with coordinating the activities of over 30 student branches in the Mangalore Area.

NITK IEEE STUDENT BRANCH | GINI COORDINATOR

March 2014 - March 2015 | National Institute of Technology Karnataka, Surathkal, India

- Charged with coordinating the activities of the IEEE NITK Student Branch with IEEE Bangalore Section, IEEE R10, IEEE International as a part of the Global Integrated Network of IEEE (GINI).
- Also charged with representing NITK IEEE at major conferences and congresses.

OFFICEHOURS + COURSERA + GEORGIA INSTITUTE OF TECHNOLOGY | COMMUNITY TEACHING ASSISTANT

January 2014 - March 2014 | Online

- Served as an OfficeHours TA for the online course "Games without Chance: Combinatorial Game Theory" offered by Dr. Tom Morley from Georgia Institute of Technology on Coursera.

MICROSOFT RESEARCH WINTER SCHOOL ON THEORETICAL COMPUTER SCIENCE 2012 | PARTICIPANT

December 2012 | Hyderabad, India

- Attended the 5 day winter school on Theoretical Computer Science organized by Microsoft Research India and IIIT Hyderabad. Topics covered included Machine Learning, Approximation Algorithms and Differential Privacy.

PUBLICATIONS - FULL PAPERS

COORDINATING COLLABORATIVE CHAT IN MASSIVE OPEN ONLINE COURSES | GAURAV SINGH

TOMAR, SREECHARAN SANKARANARAYANAN, XU WANG, CAROLYN P. ROSÉ

International Conference of the Learning Sciences (ICLS) 2016

June 20, 2016 | National Institute of Education, Singapore

TOWARDS SENTIMENT ORIENTATION DATA SET ENRICHMENT | SREECHARAN SANKARANARAYANAN,

DAYANAND INGALE, RANVEER BHAMBHU, K CHANDRASEKARAN

International Conference on Information and Communication Technology for Competitive Strategies (ICTCS) 2016

March 04, 2016 | Udaipur, India

GAME THEORETIC MODELING OF GRAY HOLE ATTACKS IN WIRELESS AD HOC NETWORKS |

CHINTAN KETANKUMAR DOSHI, SREECHARAN SANKARANARAYANAN, VIDYASHANKAR B LAKSHMAN, K CHANDRASEKARAN

International Conference on Signals, Networks, Computing and Systems (ICSNCS) 2016

February 25, 2016 | New Delhi, India

META-CLASSIFIER BASED APPROACH TO SOFTWARE CHANGE CLASSIFICATION: TOWARDS BETTER PERFORMANCE | SREECHARAN SANKARANARAYANAN, VIDYASHANKAR B LAKSHMAN, SWAPAN BHATTACHARYA, K CHANDRASEKARAN
International Engineering Symposium (IES) 2015
March 4, 2015 | Kumamoto, Japan

AUDIO SEGMENTATION USING A-PRIORI INFORMATION IN THE CONTEXT OF KARNATIC MUSIC | ASHWIN KALYAN V, SREECHARAN SANKARANARAYANAN, SUMAM DAVID S
International Conference on Signal Processing, Informatics, Communication and Energy Systems (SPICES) 2015
February 19, 2015 | Calicut, India

PEER ASSISTED LEARNING(PAL): AN OPTIMAL PAIRING OF COURSE PARTICIPANTS | SREECHARAN SANKARANARAYANAN
The Asian Conference on Education (ACE) 2014
October 28, 2014 | Osaka, Japan

PROJECT JAGRITI: CROWDSOURCED CHILD ABUSE REPORTING | DHARUV CHAND M, SREECHARAN SANKARANARAYANAN, CHANDRAMOULI SHARMA
Global Humanitarian Technology Conference (GHTC) 2014
October 10, 2014 | Silicon Valley, USA

SMARTSLATE: RETHINKING TACTILE INTERFACES FOR THE BLIND | RAGHAVENDRA SH, SREECHARAN SANKARANARAYANAN
International Humanitarian Technology Conference (IHTC) 2014
June 4, 2014 | Montreal, Canada

PUBLICATIONS - POSTERS AND WORKSHOP PAPERS

GENERATING QUESTIONS AND MULTIPLE-CHOICE ANSWERS USING SEMANTIC ANALYSIS OF TEXTS | JUN ARAKI, DHEERAJ RAJAGOPAL, SREECHARAN SANKARANARAYANAN, SUSAN HOLM, YUKARI YAMAKAWA, TERUKO MITAMURA
International Conference on Computational Linguistics (COLING) 2016
December 13, 2016 | Osaka, Japan

FROM INSIGHTS TO INTERVENTIONS: INFORMED DESIGN OF DISCUSSION AFFORDANCES FOR NATURAL COLLABORATIVE EXCHANGE | SREECHARAN SANKARANARAYANAN, GAURAV SINGH TOMAR, MIAOMIAO WEN, AKASH BHARADWAJ, CAROLYN PENSTEIN ROSÉ
AAAI Spring Symposium on Intelligent Systems for Supporting Distributed Human Teamwork 2016
March 21, 2016 | Palo Alto, California

INTELLIGENT CONVERSATIONAL AGENTS AS FACILITATORS AND COORDINATORS FOR GROUP WORK IN DISTRIBUTED LEARNING ENVIRONMENTS (MOOCS) | GAURAV SINGH TOMAR, SREECHARAN SANKARANARAYANAN, CAROLYN PENSTEIN ROSÉ
AAAI Spring Symposium on Intelligent Systems for Supporting Distributed Human Teamwork 2016
March 21, 2016 | Palo Alto, California

INVESTIGATING THE "WISDOM OF CROWDS" AT SCALE | ALOK SHANKAR MYSORE AND VIKAS S. YALIGAR ET AL., SREECHARAN SANKARANARAYANAN
ACM Symposium on User Interface Software & Technology (UIST)
November 08, 2015 | Osaka, Japan

AUTOMATED GENERATION AND DIFFICULTY ESTIMATION OF CLOZE QUESTIONS TOWARDS LANGUAGE PROFICIENCY ASSESSMENT | SREECHARAN SANKARANARAYANAN, DANIEL BENGIS, ULF BREFELD
Language Technologies Institute Student Research Symposium (LTI SRS) 2015
August 20, 2015 | Pittsburgh, PA, USA

MUSIC TRANSCRIPTION IN CARNATIC MUSIC THROUGH CLASSIFICATION OF GAMAKA | ASHWIN KALYAN V, SREECHARAN SANKARANARAYANAN, VINAY SUNDARRAJAN, DR. SUMAM DAVID S
Midwest Music Information Retrieval Gathering (MMIRG) 2014, Northwestern University
June 14, 2014 | Evanston, Illinois

DEMONSTRATION OF MAPREDUCE FOR MINING SOFTWARE REPOSITORIES | SREECHARAN SANKARANARAYANAN, SIDDHARTH SANTURKAR

COURSE PROJECTS

ALEXA PRIZE January 2017 - Present
CMU Magnus

EFFICIENT DATA STRUCTURE FOR BIG DATA STORAGE October 2013 - November 2013
Developed and implemented a variation of the Practical Algorithm for Retrieving Information Coded in Alphanumeric (Patricia Trie) for the Advanced Data Structures and Algorithms course to store and retrieve over 10 million words from primary memory.

SENTIMENT ANALYSIS OF TWITTER FEEDS June 2013 - July 2013
This project aimed at accessing the Twitter API to get public tweets each of which is then assigned a sentiment score which quantifies if the post expresses positive or negative sentiment. The project was assigned and completed as a part of the online course Introduction to Data Science.

EDGAR SEC CRAWLER July 2013
Built a web crawler for downloading and saving financial documents filed under EDGAR by the Securities and Exchange commission of the USA. The crawler uses the Central Index Lookup (CIK) to download the complete filings of the company in .txt and .xbrl formats. (github.com/sreecharan93/FormCrawl)

MAPREDUCE ALGORITHMS IN JSMAPREDUCE AND HADOOP June 2013
Implemented basic MapReduce algorithms on the online JSMaReduce platform and Hadoop for analyzing website logs as part of the online course Introduction to Hadoop and MapReduce offered on Udacity.

EXTRA CURRICULAR ACTIVITIES

DARREL CHONG STUDENT ACTIVITY AWARD 2014 (BRONZE) Received the prestigious Darrel Chong Student Activity Award 2014 (Bronze) for the project "Open Collaborative Learning" conducted under the NITK IEEE Student Branch.

ALL IEEE-R10 YOUNG ENGINEERS' HUMANITARIAN CHALLENGE 2014 Received IEEE Region 10 funding for the project "SmartSlate: Rethinking Tactile Interfaces for the Blind".

NATIONAL YOUTH IDEA CHALLENGE 2013 Placed among top 50 ideators as a part of the National Youth Idea Challenge 2013. Participants from more than 3 countries were screened over 3 rounds. The idea will now be implemented on <http://www.siliconconnect.me>

E-PITCH 2014 Placed fourth in E-PITCH 2014, the annual B-Plan contest organized by E-FOREA, the entrepreneurship cell of the institute for "Sonder - Crowdsourced Market Research".

JUNIOR GRADE VOCAL MUSIC EXAMINATION Passed the Junior Grade Indian Classical Vocal Music Examination from the state of Karnataka with distinction.

CONFERENCE FUNDING

CMU LTI Funding for LWMOCS II, AAAI Funding for AAAI, NSF Funding for AAAI, CMU LTI Funding for ICLS

SKILLS

- Programming Languages - C (Proficient), Java (Elementary)
- Scripting Languages - Python, Perl, AWK and Shell
- Tools and Statistical Packages - WEKA, R, libSVM, Tableau, Gephi, STATA, MeTA
- Web Tools - HTML, CSS
- Typesetting - \LaTeX
- Operating Systems - Windows, Linux

VOLUNTEER EXPERIENCES

- Volunteered for the IEEE Computer Society Membership Growth and Sustainability Committee (MGSC). Worked as a part of a four member team from the Bangalore Section of the IEEE Computer Society.
- Volunteered for the Society for the Promotion of Indian Classical Music And Culture Amongst Youth (SPIC MACAY) to preserve, promote and practice Indian classical arts.