Koustuv Saha

Curriculum Vitae

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A computer science engineer and researcher interested in the interdisciplinary domain of social computing and its applications in precision medicine, working with real-world problems from natural language processing, machine learning, statistical modeling, and information retrieval. Currently involved in using social media as an unobtrusive medium of passive sensing for predicting and characterizing mental well-being attributes among individuals.

Education

2016– **Doctor of Philosophy Student**, *Computer Science*.
Advisor: Dr. Munmun De Choudhury, Specialization: Social Computing
School of Interactive Computing, Georgia Institute of Technology

2008–2012 **Bachelor of Technology (Hons.)**, *Computer Science and Engineering*.
Guide: Dr. Sujoy Ghose, B.Tech Project: Ontology based Semantic Information Retrieval
Computer Science and Engineering, Indian Institute of Technology Kharagpur

Publications

2018 CSCW **Saha, K.**, & De Choudhury, M. (2017). Modeling Stress with Social Media Around Incidents of Gun Violence on College Campuses. In Proceedings of the ACM Human Computer Interaction, 2(92), **Accepted**., *To be presented at CSCW'18*.

2017 CSS **Saha, K.**, Sharma, E., Ernala, S. K., Ghoshal, S., & De Choudhury, M. (2017). Analyzing Ideological Discourse on Social Media: A Case Study on the Abortion Discourse. In Proceedings of the CSSA's Annual Conference on Computational Social Science (CSS)..

2017 UbiComp **Saha, K.**, Chan, L., de Barbaro, K., Abowd, G., & De Choudhury, M. (2017). Inferring Mood Instability on Social Media by Leveraging Ecological Momentary Assessments. In Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies, 3(95)., *Presented at UbiComp'17*.

2017 JMIR **Saha, K.**, Weber, I., Birnbaum, M. L., & De Choudhury, M. (2017). Characterizing Awareness of Schizophrenia Among Facebook Users by Leveraging Facebook Advertisement Estimates. Journal of medical Internet research, 19(5)., *Presented at CHI'17*.

Patents

2015 Patel, L., **Saha, K.**, Das, S., & Biswas, A., A System and Method for Sentiment Analysis of Text., *US Provisional Patent Filed, Aug'14, US Patent Filed, Aug'15*.

2015 Patel, L., **Saha, K.**, Das, S., & Biswas, A., A System and Method for scalable and continuous learning and annotation of data., *US Provisional Patent Filed, Mar'15*.

2014 Bose, A., **Saha, K.**, Das, S., & Biswas, N., A System and Method for Predicting Compliance Issues., *US Provisional Patent Filed, Feb'14*.

Experience

May 2017– **Research Intern**, *Fred Hutch*, Hutch Data Commonwealth.
Worked in the domain of Biomedical Data sciences and Computational Social Science. Primary research problem included high dimensional machine learning using genomics data to predict the risk of Colorectal Cancer. Additionally, worked on quantifying the 'impact' of tweets for analyzing the outreach of Cancer Research and Treatment information.

Aug 2016– **Graduate Research Assistant**, *Georgia Tech*, School of Interactive Computing.
PhD (Computer Science), specializing in Social Computing. Research interest primarily involves using social media as a passive sensor for characterizing and predicting mental wellbeing attributes of individuals. Broadly, motivated towards devising novel techniques of leveraging data for real-world problems.

Dec 2012 – Aug 2016 **Senior Researcher**, *Abzooba Inc.*, X, NLP & Data Sciences R&D.
As the product development lead of XPresso, Abzooba's flagship product. Improvised techniques, and implemented modules for extracting information in an end-to-end automated, scalable, and efficient fashion. Worked with predictive analytics based business problems from finance, retail, and healthcare sector. Instrumental in conceptualization and implementation of Continuous Learning System (CLS). Ranked 1st at a US based retail giant's Hackathon for Compliance Risk IndeX (CRIX).
- Algorithms and techniques in Natural Language Processing and Machine Learning, as well as the latest technological advances in software development at production-level
- NLP problems such as aspect based sentiment analysis, emotion categorization, document classification, semantic search, trending topics detection, ontology building, and so on.
- NLP techniques like Semantic Role Labeling, Dependency Parsing, Word-Vectors, Topic Modeling, LSA.
- Data Sciences problems like predicting compliance risk, member expenses, distributor costs, etc.

Sep 2013 – Jul 2014 **Visiting Faculty Member**, *Praxis Business School*, Analytics.
Conducted courses on Big Data Analytics and Retail Analytics. Subjects included Hadoop, Map Reduce, Unix and Programming fundamentals, and Natural Language Processing.

Aug 2012 – Nov 2012 **Junior Research Associate**, *Infosys Ltd.*, Infosys Labs, R&D.
Conceptualized & implemented an information extraction tool from unstructured financial reports. Contributed in ideation of a semantic similarity based recommendation system of research projects.

May 2011 – July 2011 **Research Intern**, *Siemens Information Systems Ltd.*, Corporate Technologies R&D.
Set up a Hadoop cluster of 30 computers, installed Mahout and Katta for running jobs. Developed a tool for accessing Lucene indexes to search and analyze their content based on parameters.

Academic Distinctions

2008 Qualified in Top 0.5% at IITJEE 2008 and Top 0.3% at AIEEE 2008.

2006 Awarded National Talent Search Examination (NTSE) Scholarship by NCERT, Govt of India.

Miscellaneous

Skills and Interest: Computational Social Science, Crisis Informatics, Mental Health, Campus Well-being, Natural Language Processing, Time Series Analysis, Statistical Modeling, Information Retrieval

Reviewing: JMIR, CSCW

Programming: Java, Python, R, C, Bash, HTML, CSS, Javascript

Libraries: Stanford CoreNLP, LIWC, NLTK, WordNet, Pandas, Scikit-Learn, Vowpal Wabbit

Framework: MySQL, MongoDB, BigQuery, Hadoop, Neo4J

Languages: English, Bengali, Hindi

Last Updated: 2017/10/20