

Subhabrata Mukherjee

CONTACT INFORMATION

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WA 98109, Seattle, USA

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RESEARCH INTERESTS

Information Extraction, Text Mining, Natural Language Processing, Recommender Systems, Probabilistic Graphical Models, Machine Learning, Deep Learning

EDUCATION

Max Planck Institute for Informatics, Saarbrücken, Germany

Ph.D., Computer Science and Engineering, **November 2013 - March 2017**

- Dissertation Topic: “Probabilistic Graphical Models for Credibility Analysis in Evolving Online Communities”. Developed machine learning models to extract “credible”, “trustworthy” and “expert” information from user-generated online content. These models exploit the joint interaction between multiple factors (e.g., textual content, social network, latent topics etc.) to automatically assess the credibility of (noisy) user-generated content, and expertise of users.
- Advisor: **Prof. Gerhard Weikum**
- Dissertation Committee: Prof. Gerhard Weikum, Prof. Jiawei Han, Prof. Stephan Günnemann, Prof. Dietrich Klakow
- Grade: *summa cum laude*

Indian Institute of Technology (IIT - Bombay), Mumbai, India

M.Tech., Computer Science and Engineering, July 2012

- Dissertation Topic: “Adaptation of Sentiment Analysis to New Linguistic Features, Informal Language Form and World Knowledge”
- Advisor: **Prof. Pushpak Bhattacharyya**
- CGPA 9.62, Maximum 10.0

Jadavpur University, Kolkata, India

B.Tech., Computer Science and Engineering, July 2010

- CGPA 8.73, Maximum 10.0

PROFESSIONAL EXPERIENCE

Amazon, Product Graph (Machine Learning Science), Seattle, USA

Machine Learning Scientist

October 2017 - now

Working on building the authoritative knowledge base for every product in the world. Building large-scale machine learning and deep learning models that learn from text and graph.

Max Planck Institute for Informatics, Saarbrücken, Germany

Researcher

March 2017 - September 2017

Worked on credibility analysis, recommender systems, and influence networks.

Google Research, Machine Learning and Intelligence, Mountain View, California USA

Intern

August 2015 - December 2015

Worked on semantic annotation of large-scale datasets (audio, video, web-tables, map-reduce job logs etc.) with Knowledge Graph to improve Google Datasearch (GOODS) by making it aware of the salient semantic types of the entities present in any dataset.

IBM Research Lab, Watson Technologies and Solutions, Delhi, India

Research Engineer

October 2012 - October 2013

- Developed an unsupervised framework for constructing domain ontologies from a corpus of knowledge articles that improves the recall of Question-Answering systems (e.g., Watson) by making it aware of domain-specific entities and their relations.

- Developed an unsupervised framework for self-assist systems that can serve as virtual call center agents to guide the customer in performing various domain-dependent tasks (like troubleshooting a problem, changing settings in devices, etc.).
- Developed supervised methods for intent classification of voice queries on mobile devices (e.g., map, command-and-control, navigational, and knowledge-based queries for voice search).
- Developed generative models for personalized recommendation that take into account user preferences, intent, item facets and their ontological associations, etc.

Credit Suisse Business Analytics, High Frequency Trading, Mumbai, India
Technology Analyst **July 2012 - September 2012**

TEACHING
EXPERIENCE

Indian Institute of Technology (IIT-Bombay), Mumbai India

Teaching Assistant for CS 725 (Foundations of Machine Learning), CS 626 and CS 460 (Natural language Processing and the Web), CS 101 (Computer Programming)

ACADEMIC
SERVICE
(ORGANIZER,
REVIEWER, PC)

Organizer: Domain Specific Speech and Language Understanding Workshop, Amazon Machine Learning Conference (AMLC 2018); Knowledge Graphs: Construction, Management and Querying, Semantic Web Journal (Editorial Board Member)
PC: Amazon Research Awards (ARA 2017), Amazon Machine Learning Conference (AMLC 2018), Humanizing Artificial Intelligence (IJCAI 2018), Natural Language Interfaces for Web of Data (ISWC 2018), Exploiting AI for Data Management Systems (SIGMOD 2018), Interactive Data Exploration and Analytics (KDD 2017), Social Aspects in Personalization and Search (ECIR 2018)
Reviewer: ACM Transactions on Knowledge Discovery from Data (TKDD), IEEE Transactions on Knowledge and Data Engineering (TKDE), Information Systems (Journal), Data Mining and Knowledge Discovery (DAMI), Artificial Intelligence (Journal), IEEE Transactions on Computational Social Systems (TCSS), Journal of Web Semantics, Journal of Human-Computer Studies

INVITED TALKS

MIT Media Lab, Cambridge, USA, December 2016
Amazon, Seattle, USA, December 2016
Bell Labs, Cambridge, UK, November 2016
IBM Research Lab, Zurich, Switzerland, August 2016

TUTORIALS

- **Fact Checking: Theory and Practise, KDD 2018:** ACM SIGKDD International Conference on Knowledge Discovery and Data Mining, **Subhabrata Mukherjee**, Christos Faloutsos, Xin Luna Dong, Xian Li, and Prashant Shiralkar
- **Graph and Tensor Mining for Fun and Profit, KDD 2018:** ACM SIGKDD International Conference on Knowledge Discovery and Data Mining, **Subhabrata Mukherjee**, Christos Faloutsos, Xin Luna Dong, Andrey Kan and Jun Ma

PUBLICATIONS

Scholar profile as of 4/24/2018: [DBLP] [Google Scholar] Citations: 444, H-Index: 12, I10-Index: 12

2018

- **Subhabrata Mukherjee**, Xin Luna Dong, Fabian Moerchen and Emanuele Coviello, MusicVersionTagger: Music Version Extraction of Tracks from Catalog Meta-data, **AMLC 2018:** Amazon Machine Learning Conference
- Kashyap Popat, **Subhabrata Mukherjee**, Jannik Stroetgen and Gerhard Weikum, CredEye: A Credibility Lens for Analyzing and Explaining Misinformation, **WWW 2018:** ACM International Conference on World Wide Web

2017

- **Subhabrata Mukherjee**, Probabilistic Graphical Models for Credibility Analysis in Evolving Online Communities, **PhD Dissertation**, Saarland University, 2017

- **Subhabrata Mukherjee**, Kashyap Popat and Gerhard Weikum, Exploring Latent Semantic Factors to Find Useful Product Reviews, **SDM 2017**: SIAM Conference on Data Mining (Acceptance rate: 26%)
 - Kashyap Popat, **Subhabrata Mukherjee**, Jannik Stroetgen and Gerhard Weikum, Where the Truth Lies: Explaining the Credibility of Emerging Claims on the Web and Social Media, **WWW 2017**: ACM International Conference on World Wide Web
- 2016
- **Subhabrata Mukherjee**, Stephan Günnemann and Gerhard Weikum, Continuous Experience-aware Language Model, **KDD 2016**: ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (Acceptance rate: 8.9%)
 - **Subhabrata Mukherjee**, Sourav Dutta and Gerhard Weikum, Credible Review Detection with Limited Information using Consistency Features, **ECML-PKDD 2016**: European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (Acceptance rate: 28%)
 - Kashyap Popat, **Subhabrata Mukherjee**, Jannik Stroetgen and Gerhard Weikum, Credibility Assessment of Textual Claims with Web Evidence, **CIKM 2016**: ACM International Conference on Information and Knowledge Management
- 2015
- **Subhabrata Mukherjee**, Hemank Lamba and Gerhard Weikum, Experience-aware Item Recommendation in Evolving Review Communities, **ICDM 2015**: IEEE International Conference On Data Mining (Acceptance rate: 18.1%)
 - **Subhabrata Mukherjee** and Gerhard Weikum, Leveraging Joint Interactions for Credibility Analysis in News Communities, **CIKM 2015**: ACM International Conference on Information and Knowledge Management (Acceptance rate: 17.9%)
- 2014
- **Subhabrata Mukherjee**, Gerhard Weikum and Cristian Danescu-Niculescu-Mizil, People on Drugs: Credibility of User Statements in Health Communities, **KDD 2014**: ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (Acceptance rate: 14.6%)
 - **Subhabrata Mukherjee**, Jitendra Ajmera and Sachindra Joshi, Domain Cartridge: Unsupervised Framework for Shallow Domain Ontology Construction from Corpus, **CIKM 2014**: ACM International Conference on Information and Knowledge Management (Acceptance rate: 20.8%)
 - **Subhabrata Mukherjee**, Gaurab Basu and Sachindra Joshi, Joint Author Sentiment Topic Model, **SDM 2014**: SIAM Conference on Data Mining (Acceptance rate: 15.4%)
 - **Subhabrata Mukherjee** and Sachindra Joshi, Author-Specific Hierarchical Sentiment Aggregation for Rating Prediction of Reviews, **LREC 2014**: Language Resources and Evaluation Conference
 - **Subhabrata Mukherjee** and Sachindra Joshi, Help Yourself: A Virtual Self-Assist Agent, **WWW 2014**: ACM International Conference on World Wide Web (Demo)
 - **Subhabrata Mukherjee**, Jitendra Ajmera and Sachindra Joshi, Unsupervised Approach for Shallow Domain Ontology Construction from Corpus, **WWW 2014**: ACM International Conference on World Wide Web (Poster)
- 2013
- **Subhabrata Mukherjee** and Sachindra Joshi, Sentiment Aggregation using ConceptNet Ontology, **IJCNLP 2013**: International Joint Conference on Natural Language Processing (Acceptance rate: 23.4%)
 - **Subhabrata Mukherjee**, Ashish Verma and Kenneth W. Church, Intent Classification of Voice Queries on Mobile Devices, **WWW 2013**: ACM Conference on World Wide Web (Poster)
 - **Subhabrata Mukherjee**, Gaurab Basu and Sachindra Joshi, Incorporating Author Preference in Sentiment Rating Prediction of Reviews, **WWW 2013**: ACM International Conference on World Wide Web (Poster)
- 2012

- **Subhabrata Mukherjee** and Pushpak Bhattacharyya, Sentiment Analysis in Twitter with Lightweight Discourse Analysis, **COLING 2012: International Conference on Computational Linguistics** (Acceptance rate: 16%)
- **Subhabrata Mukherjee** and Pushpak Bhattacharyya, YouCat : Weakly Supervised Youtube Video Categorization System from Meta Data & User Comments using WordNet & Wikipedia, **COLING 2012: International Conference on Computational Linguistics** (Acceptance: 16%)
- **Subhabrata Mukherjee** and Pushpak Bhattacharyya, Feature Specific Sentiment Analysis for Product Reviews, **CICLING 2012: International Conference on Intelligent Text Processing and Computational Linguistics** (Acceptance rate: 28.6%)
- **Subhabrata Mukherjee** and Pushpak Bhattacharyya, WikiSent : Weakly Supervised Sentiment Analysis Through Extractive Summarization With Wikipedia, **ECML-PKDD 2012: European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases** (Acceptance rate: 23.7%)
- Balamurali A.R., **Subhabrata Mukherjee**, Akshat Malu and Pushpak Bhattacharyya, Leveraging Sentiment to Compute Word Similarity, GWC 2012: Global WordNet Conference
- **Subhabrata Mukherjee**, Akshat Malu, Balamurali A.R. and Pushpak Bhattacharyya, TwiSent: A Multi-Stage System for Analyzing Sentiment in Twitter, CIKM 2012: ACM International Conference on Information and Knowledge Management (Poster)

BOOK CHAPTERS Sentiment Analysis of Reviews, In Encyclopedia of Social Network Analysis and Mining (ESNAM) (Second Edition), Springer New York, 2017.

ACHIEVEMENTS Graduated *summa cum laude* from Max Planck Institute for Informatics, Germany
 Invited for Microsoft Research PhD Summer School, Cambridge, UK, 2015
 Student Travel Award for SIAM Data Mining (SDM), 2014
 IMPRS (International Max Planck Research School) Scholarship for PhD, 2013
 Member of the group IBM Watson Solutions that has been recognized with the 2013 North America Frost & Sullivan Award for New Product Innovation, 2013
 10 pointer in Semester 3 & 4 at IIT Bombay, and overall rank within Top 5 in the department, 2012
 Honors (undergraduate) in Computer Science, Jadavpur University, 2010
 99.90 percentile in the all-India GATE Entrance Exam (2010), and 99.81 percentile in the all-India WBJEE Entrance Exam (2006)
 Received the Meritorious Children Award from Indian Oil Corporation, Kolkata, 2004
 Runners-up at the Inter-School Chess competition held at Don Bosco (2003), and the annual Chess competition held at South Point High School for 2 yrs

REFERENCES Available upon request.