

Joydeep Mondal

Data Scientist, IBM Corporate Headquarters (Research & Development), New York, USA
Research Software Engineer, IBM Research Lab, New Delhi, India

Website: www.joy-deep.com

Email:

joydeep.iitrcs@gmail.com

Area(s) of Interest: Data Science, Machine Learning, NLP, Data Mining, Artificial Intelligence, Cognitive Collaboration, Blockchain, Data Structure and Algorithm

Educational Qualifications	Year	Board/Institution
M.Tech in Computer Science and Engineering	2015	Indian Institute of Technology, Roorkee
UG: Computer Science and Engineering	2013	Indian Institute of Engineering Science and Technology, Shibpur

RESEARCH PUBLICATIONS

Joydeep Mondal, Sarthak Ahuja, Kushal Mukherjee, Sudhanshu Shekhar Singh
“**Benchmarking of a Novel POS Tagging Based Semantic Similarity Approach for Job Description Similarity Computation**” ESWC 2018

https://2018.eswc-conferences.org/wp-content/uploads/2018/02/ESWC2018_paper_111.pdf

Shrihari Vasudevan, Moninder Singh, *Joydeep Mondal*, Michael Peran, Ben Zweig, Brian Johnston, Rachel Rosenfeld “**Estimating fungibility between skills by combining skill-similarities obtained from multiple data sources**” Data Science and Engineering Journal 2018

https://link.springer.com/article/10.1007/s41019-018-0075-3?wt_mc=Internal.Event.1.SEM.ArticleAuthorOnlineFirst&utm_source=ArticleAuthorOnlineFirst&utm_medium=email&utm_content=AA_en_06082018&ArticleAuthorOnlineFirst_20180925

Sarthak Ahuja, *Joydeep Mondal*, Sudhanshu Shekhar Singh, David Glenn George
“**Similarity computation exploiting the semantic and syntactic inherent structure among job titles**” ICSSOC 2017

https://link.springer.com/chapter/10.1007/978-3-319-69035-3_1

Rakesh Ramesh Rao Pimplikar, Kalapriya Kannan, Abhik Mondal, *Joydeep Mondal*, Sushant Saxena, Gyana Parija, Chandra Devulapalli “**RISE: Resolution of Identity through Similarity Establishment on Unstructured Job Descriptions**” ICSSOC 2017

https://link.springer.com/chapter/10.1007/978-3-319-69035-3_2

Rakesh R Pimplikar, Kushal Mukherjee, Gyana Parija, Harit Vishwakarma, Ramasuri Narayanam, Sarthak Ahuja, Rohith D Vallam, Ritwik Chaudhuri, **Joydeep Mondal** "Cogniculture: Towards a Better Human-Machine Co-evolution" Arxiv <https://arxiv.org/abs/1712.03724>

Sandip K Chaurasiya, **Joydeep Mondal**, Suman Datta "Field-of-View based Hierarchical Clustering to Prolong Network Lifetime of WMSN with Obstacles" , ICECCE 2014 <https://ieeexplore.ieee.org/abstract/document/7086638/>

A Golestani, M Masli, NS Shami, J Jones, A Menon, " Real-Time Prediction of Employee Engagement Using Social Media and Text Mining" , ICMLA 2018 <https://ieeexplore.ieee.org/abstract/document/8614250/>

PATENTS

Shrihari Vasudevan, Moninder Singh, **Joydeep Mondal**, Michael Peran, Ben Zweig, Brian Johnston, Rachel Rosenfeld, Pankaj Srivastava, Owen Cropper and Steve Loehr "System of estimating fungibility or substitutability between skills by combining skill-similarities obtained from multiple information sources" – (FILED)

Shrihari Vasudevan, **Joydeep Mondal**, Richard H Zhou, Michael Peran, Michael Ticknor, Daniel Augenstern "Method of choosing exemplars from a large multi-class data-set given few exemplars of one of more of the classes" - (FILED)

Sudhanshu Shekhar Singh, **Joydeep Mondal**, Sarthak Ahuja, David George, John Medicke, Amanda Klabzuba "System and Method to produce Generalized Representation of Job Description Documents and Calculate Similarity using the Representation in Recruiting Domain" – (FILED)

Sarthak Ahuja, Kushal Mukherjee, **Joydeep Mondal**, Sudhanshu Shekhar Singh " App-lause: VR based Audience Simulation for Immersive Rehearsals" – (FILED)

Vinayak Sastri, **Joydeep Mondal**, Abhijit Mishra, Seema Nagar, Kuntal Dey "Recommending Cuts for Getting a Particular Country-Specific Motion Picture Content Rating of Movies/TV Shows" – (FILED)

IBM Internal Achievements

1. **Two A level Research Accomplishments** for the works done in IBM Research Lab, India. i > Research Contributions to Cognitive Skills Transformation in Service Delivery Organizations, ii > Research Contributions to IBM Watson Talent Technologies

2. Won the **BEST IN SHOW** (1st prize) award as a 5-membered team in *Expertise Research Challenge*.
3. Received **IBM First Plateau** as invention achievement award.

CURRENT EMPLOYMENT

Data Scientist (Centre for Engagement & Social Analytics) at IBM Corporate Headquarters (1st May, 2018 - Present)

Projects: Action Extraction and Recommendation from employee feedback

Contributed to build the Machine Learning and NLP Models for extraction and recommendation of the action items from unstructured raw feedback data.

Text and Statistical comparative analysis of IBM Polls and Glassdoor data:

Statistical and textual data comparison analysis for IBM's internal Poll's data and Glassdoor data.

Text and statistical analysis of IBM ESQ data:

Contributed to build the Machine Learning and NLP Models for theme and subtheme extraction from IBM ESQ data.

IBM spotlight card similarity algorithm:

Design and implemented aggregated similarity measures between two spotlight cards as a part of cognitive leadership project..

PAST EMPLOYMENT

Research Software Engineer (Analytics and Optimization Group) at IBM India Research Lab, New Delhi (23rd July, 2015 – 30th April, 2018)

Projects 1: IBM Watson Recruitment (IWR) Link :

<https://www.ibm.com/watson/talent/recruitment/>

- Contributed to build the Machine Learning Models to build IBM Watson Recruitment platform. It uses Spark as it's underlined distributed system architecture and Python as language. Kafka queue has been used to retrieve task messages for the product.

Projects 2: SkillSmart Project.

- Contributed in data collection modules (IBM accomplishment database from IBM Notes, ACM ccs taxonomy), implemented basic taxonomy structure, developed skill-definition API, contributed in developing wiki-article extraction API and Taxonomy algorithm (Edmond's Algorithm), Creating ground truth for skill-extraction classifier, explored Word2vec in python (gensim library) and

Natural Language Classifier (IBM Watson API).

Won the **BEST IN SHOW** (1st prize) award as a 5-membered team in *Expertise @Research Challenge* (among all the IBM Research Labs worldwide).

- Top Contributor award from Manager
- Implemented taxonomy building algorithms (Hierarchical Clustering algorithm, Edmond's Algorithm), word2vec based similarity API, Code integration.

INTERNSHIP INFORMATION

IBM India Research Lab , Vasant Kunj, New Delhi, India Extreme Blue

Internship (May 2014 to July 2014)

Using Data Mining and Machine learning techniques and with the help of some NLP tools establishing similarity among unstructured job-descriptions

Research Center Imarat, Defense Research and Development Organisation (DRDO), Hyderabad, India

Project On Development of Matlab/Simulink Interfaces for Real-Time Communication with MIL Std.1553B and ADC/DAC I/O Cards (July 2012)

Integrate RT-Lab and Matlab to create a user interface for installing the device driver for 1553 ADC-DAC cards

ACADEMIC PROJECTS

Naming Schemes to manage huge data in FIB in Named Data Networking (M.Tech thesis (Aug 2014 to May 2015), IIT Roorkee) This project is concerned with proposing some new name encoding schemes for BIG DATA management in Named Data Networking (NDN) and Literature survey of naming and routing schemes in NDN

Nirbhaya Mobile App (February 7-9, 2014, Microsoft Hackathon @IIT Roorkee)

Here we developed an Windows phone 8 app that aims towards providing better security to women. The app uses the cloud and gps based services to perform this task. It was greatly appreciated by judges

Author Profiling (February 2014 to April 2014, IIT Roorkee)

This project is concerned with Authorship analysis by using several clustering technique and several training mechanism. Main task is to detect gender and age of the author which is really useful in forensic linguistics and several security issue

Noise Removal from a Dataset (January 2014 to February 2014, IIT Roorkee)

This project is concerned with making an inconsistent dataset to a consistent dataset by using several noise reduction and outlier detection methods

Mobile Cloud Computing in Android (February 2014-April 2014, IIT Roorkee)

This project is concerned with making a mobile cloud using wifi-direct, to use it for high resource consuming applications like augmented reality

Determining Similarity between Two Electrical Circuits through Partial graph Isomorphism

(B.E Final Year Project (July 2012 to March 2013), IEST, Shibpur)

The project is concerned with finding similarity between two electrical circuits through partial graph isomorphism

Hierarchical Clustering to Prolong Network Lifetime of WMSN (November 2011 to February 2012, IEST, Shibpur)

The project is concerned with hierarchical clustering to prolong network lifetime of WMSN. Simulation was done using Matlab

Course Project

Assembler (January 2013 to March 2013)

The project is concerned with writing a basic assembler using C and Fast Lexical Analyzer tool (Flex)

Course Project

Compiler (July 2013 to November 2013)

The project is concerned with writing a basic C compiler using C, Flex and Yacc tool

Course Project

Image Processing (July 2011 to October 2011)

The project is concerned with implementation of 8-way connectivity algorithm and vectorization techniques of image processing

SKILLS AND ACHIEVEMENTS

Computer Languages

C, C++, Python, Java, R, PHP

Academic Achievements

1-> Participated in **MUPHORIA** contest conducted by MU-SIGMA, as a 2-member team and got **ALL INDIA RANK-1** in 2011

2-> Got selected as a 3-member team in **ACM International Collegiate Programming Contest** (ACM ICPC) Regional Finals in 2011

3 -> Participated in **InOut Hackathon 4.0** in 2017 and won **Blockchain Track Consensus** prize in 2017

4-> Participated in the coding competition **Codezilla**(2014) organized by the Mathematics Department of IIT Roorkee and came **1st** as a 2-member team

5-> Participated in the Coding Competition of **Srijan** (Tech. Fest of Jadavpur University) and came **1st** as a 3-member team in 2012

6-> Got 2nd prize as a 2-member team in **ARBIT** (coding with an unknown language f#) event of INSTRUO (Tech. Fest of Bengal Engineering and Science University, Shibpur) in 2013

7-> Got 3rd position in **automated robotics** event held in Srijan (Tech. Fest of Jadavpur University) in 2011

	8-> MERIT SCHOLARSHIP from West Bengal Council of Higher Secondary Education after 12 th in 2009
Additional Courses Taken	Certified for SATBOT-TRICKS in the field of Automated Robotics by ROBOSAPIENS, Certified as Ethical Hacking Expert (Level- I) by Tech. Defence
Languages Known	English (SRW) , Bangla (SRW) , Hindi (SRW)

EXTRA CURRICULARS

Athletics (2010-2011)

Came 3rd in 200 mtr. Sprint and 2nd in 400 mtr. relay in University Annual Sports Meet held at Bengal Engineering and Science University, Shibpur. Regular member of University Football and Cricket Team.

Coding Competetion Organisation (2012)

Successfully co-ordinated Scribble, the coding competition of INSTRUO, Tech. Fest of Bengal Engineering and Science University