Anirban Laha

3rd Floor, Block-G, Archana Apartment, New Hospital Road (Kathgola), Chinsurah, Hooghly-712101, India.

(+91) 9480005065, 9686908073 | anirbanlaha@gmail.com | anirbanl.github.io | anirbanlaha | anirbanlaha

Research Interests

Machine Learning, Deep Learning, Natural Language Processing, Natural Language Generation, Graphical Models.

Education

Indian Institute of Science (IISc), Bangalore *Bangalore, India*

MS - Research in Computer Science and Automation *Jul. 2011 - Aug. 2013*

- *Specialization*: Machine Learning and Learning to Rank.
- *Thesis Topic*: "Machine Learning and Rank Aggregation Methods for Gene Prioritization from Heterogeneous Data Sources". Link.
- *Advisor*: Dr. Shivani Agarwal.

Jadavpur University, Kolkata *Kolkata, India*

BE in Computer Science and Engineering - 9.05/10 *Jul. 2006 - Apr. 2010*

- *Final Year Project*: "Solving the Single-Source Shortest Path Problem for Dynamic Graphs".

Work Experience

IBM Research AI *Bangalore, India*

Research Software Engineer *November 2015 - PRESENT*

- *Specialization*: Machine Learning, Deep Learning, Natural Language Processing.
- *Research Projects*: Natural Language Generation, IBM Debating Technologies, Machine Learning for Creativity.

Microsoft IDC (AdCenter) *Bangalore, India*

Applied Scientist *Aug. 2013 - Nov. 2015*

- *Project*: Experimentation of new Click Prediction models for Ads Optimization of Microsoft Bing Ads in US and INTL Markets.
- *Domain*: Machine Learning, Information Retrieval, Ranking, Map-Reduce.

Amazon.com *Chennai, India*

Software Development Engineer *May. 2010 - Jul. 2011*

- *Project*: Development of automated real-time scalable Pricing System for Amazon Kindle eBooks for markets like US, UK and DE.

Selected Research Publications

1. Laha A., Chemmengath S.A., Agrawal P., Khapra M., Sankaranarayanan K., Ramaswamy H.G. (2018). *On Controllable Sparse Alternatives to Softmax*. In **Neural Information Processing Systems (NeurIPS/NIPS), 2018**.
2. Nema P., Khapra M., Laha A., Ravindran B. (2017). *Diversity driven Attention Model for Query-based Abstractive Summarization*. In **Association for Computational Linguistics (ACL) 2017**.
3. Pahuja V., Laha A., Mirkin S., Raykar V., Kotlerman L., Lev G. (2017). *Joint Learning of Correlated Sequence Labelling Tasks Using Bidirectional Recurrent Neural Networks*. In **INTERSPEECH 2017**.
4. Laha A. and Raykar V. (2016). *An Empirical Evaluation of various Deep Learning Architectures for Bi-Sequence Classification Tasks*. In **International Conference on Computational Linguistics (COLING) 2016**.
5. Nema P., Shetty S., Jain P., Laha A., Sankaranarayanan K. and Khapra M. (2018). *Generating Descriptions from Structured Data Using a Bifocal Attention Mechanism and Gated Orthogonalization*. In **NAACL-HLT, 2018**.
6. Jain P., Laha A., Sankaranarayanan K., Nema P., Khapra M. and Shetty S. (2018). *A Mixed Hierarchical Attention based Encoder-Decoder Approach for Standard Table Summarization*. In **NAACL-HLT** (Short), **2018**.

Highlights

- IBM Research - India **Distinguished Paper Award** for paper published at ACL 2017.
- Awarded the prestigious **Jagadish Bose National Science Talent Search** Senior Scholarship in 2006.
- Efforts towards IBM Project Debater facilitated a **live machine vs human debate**. (News: NYT | Forbes | The Guardian).
- **RANK 1** in the research interviews of IISc, Bangalore in 2011 (among all MS and PhD applicants). Link.
- **All-India Rank of 82** in GATE 2010 (with percentile of 99.9 in CS).
- **RANKED in Top-3** during BE in CS Dept. of Jadavpur University, Kolkata.
- **PC member** of ACL 2018 and COLING 2018 and **Reviewer** for VLDB 2017, NIPS 2017, NIPS 2018, and AAAI 2019.

Invited Talks and Tutorials

- [*07 Mar, 2018*] **Generating Natural Language Descriptions from Structured Data**. Venue: IBM Research-IISc Workshop on Knowledge and Learning on March 07, 2018 organised at IISc. Details: Link.
- [*20 Jan, 2018*] **Tutorial on Natural Language Processing and Generation**. Venue: Technical Talk on the broader theme of 'Cognitive Analytics and NLP' as part of the annual science and cultural fest at IISc, Bangalore (http://pravega.org/).

Selected Patents

1. Anirban Laha, Vijay Ekambaram , Shivkumar Kalyanaraman. *Object Storage and Retrieval Based upon Context*. US Patents and Trademarks Office (USPTO). **Rated highest value by IBM**.
2. Abhijit Mishra, Anirban Laha, Parag Jain, Karthik Sankaranarayanan. *Generation of Variable Natural Language Descriptions from Structured Data*. US Patents and Trademarks Office (USPTO).
3. Anush Sankaran, Pranay Lohia, Priyanka Agrawal, Disha Shrivastava, Anirban Laha, Parag Jain. *Cognitive Assistant for Co-generating Creative Content*. US Patents and Trademarks Office (USPTO).
4. Saneem A. Chemmengath, Anirban Laha, Parag Jain, Saravanan Krishnan. *Script Writer Assistant : Script modification using character, context and target information*. US Patents and Trademarks Office (USPTO).

Other Publications

- Laha A., Jain P., Mishra A., Sankaranarayanan K. (2018). *Scalable Micro-planned Generation of Discourse from Structured Data*. Available on **arXiv, 2018**.
- Surya S., Mishra A., Laha A., Jain P., Sankaranarayanan K. (2018). *Unsupervised Neural Text Simplification*. Available on **arXiv, 2018**.
- Shrivastava D., Chemmengath S.A., Laha A., Sankaranarayanan K. (2017). *A Machine Learning Approach for Evaluating Creative Artifacts*. In **SIGKDD Workshop on Machine Learning for Creativity (ML4Creativity), 2017**.
- Jain P., Agrawal P., Mishra A., Sukhwani M., Laha A., Sankaranarayanan K. (2017). *Story Generation from Sequence of Independent Short Descriptions*. In **SIGKDD Workshop on Machine Learning for Creativity (ML4Creativity), 2017**.
- Laha A., Dey P., Bandyopadhyay S., Mukherjee S., Vallam R.D., Garg D., Ray R., Narahari Y. (2012). *Prediction Markets: Connections with Proper Scoring Rules*. **Technical Report**.
- Mukherjee S., Roy B., Laha A. (2010). *An Efficient Cryptographic Hash Algorithm (BSA)*. In **10th National Workshop on Cryptology (NWC), 2010**.

Professional Service

- **PC member** of SIGKDD Workshop on Machine Learning for Creativity (ML4Creativity), 2017.
- **PC member** of conferences ACL 2018 and COLING 2018.
- **Reviewer** for VLDB 2017, NIPS 2017, NIPS 2018, and AAAI 2019.

Awards and Achievements

- FULL SCHOLARSHIP for summer research workshop organized by School of Computing, **National University of Singapore** in 2012.
- Secured the **2nd** rank in **Intercollege Programming Contest** in Jadavpur University Tech fest (CThru 2009).
- Secured **All-India Rank 56** in WBJEE 2006.
- Secured **1st** and **2nd** rank in Inter School Science Fiesta in Science and Maths resp in 2003.
- Secured **All-India Rank 90** in First National Cyber Olympiad 2001.

Extra Curricular Activities

- *Hobbies*: Travelling, Photography, Reading Fiction (Crime, Suspense Thrillers, Science-Fiction).
- *Sports*: Running, Badminton, Table Tennis, Lawn Tennis, Pool, Cricket.

References

1. Dr. **Karthik Sankaranarayanan** (Senior Researcher and Research Manager, IBM Research - India), kartsank@in.ibm.com.
2. Dr. **Mitesh M. Khapra** (Assistant Professor, CSE, Indian Institute of Technology, Madras), khapra.mitesh@gmail.com.
3. Dr. **Vikas C. Raykar** (Senior Researcher, IBM Research - India), viraykar@in.ibm.com.
4. Dr. **Shivani Agarwal** (Rachleff Family Associate Professor, University of Pennsylvania), ashivani@seas.upenn.edu.