

# SOMNATH BASU ROY CHOWDHURY

## Residential Information

Carrboro, NC  
Chapel Hill 27516, US.

## Electronic Information

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## Research Interests

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Representation Learning, Information-Theoretic evaluation metrics and Fairness in NLP.

## Education

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**University of North Carolina (UNC) at Chapel Hill** Jan 2021 - present

Ph.D. in Computer Science

Advisor: Prof. [Snigdha Chaturvedi](#)

**Indian Institute of Technology (IIT) - Kharagpur, India** 2013 - 2018

B.Tech. & M.Tech. (Dual Degree Hons.) in Electrical Engineering Rank - 3/31

Minor in Computer Science & Engineering (CSE)

Micro-specialization in Embedded Wireless Systems (EWS)

Advisor: Prof. [Jayanta Mukhopadhyay](#)

## Industry Experience

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**Google Research**, Mountain View May 2023 - Aug 2023

Student Researcher (Collaborators: [A. Dubey](#), [N. Monath](#))

**Google Research**, Mountain View May 2022 - Dec 2022

Student Researcher (Collaborators: [A. Dubey](#), [K. Choromanski](#), [N. Monath](#))

**Microsoft Corp.**, India Jul 2019 - Dec 2020

Data Scientist II, Satori Knowledge Graph (Bing team)

**Apple Inc.**, India Jun 2018 - Jul 2019

Software Engineer, Identity Management Services (IdMS).

## Publications

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Google Scholar: [xGbyrIUAAAAJ](#).

### Pre-prints:

- [16] **Unsupervised Opinion Summarization Using Approximate Geodesics**

S. Basu Roy Chowdhury, N. Monath, A. Dubey, A. Ahmed and S. Chaturvedi

arxiv 2209.07496 [[pdf](#)]

### Conference and Journal papers:

- [15] **Efficient Graph Field Integrators Meet Point Clouds**

K. Choromanski\*, A. Sehanobish\*, H. Lin\*, Y. Zhao\*, E. Berger, A. Pan, T. Parshakova, D. Watkins, T. Zhang, V. Likhoshesterov, S. Basu Roy Chowdhury, A. Dubey, D. Jain, T. Sarlos, S. Chaturvedi, A. Weller  
*Proceedings of ICML 2023* [[pdf](#)]

- [14] **Sustaining Fairness via Incremental Learning**

S. Basu Roy Chowdhury and S. Chaturvedi

*Proceedings of AAAI 2023 (Oral)*. [[pdf](#)]

- [13] **Learning Fair Representations via Rate-Distortion Maximization**

S. Basu Roy Chowdhury and S. Chaturvedi

*Proceedings of TACL 2022*. [[pdf](#)] [[MIT Press](#)]

- [12] **Unsupervised Extractive Opinion Summarization Using Sparse Coding**  
S. Basu Roy Chowdhury, C. Zhao and S. Chaturvedi  
*Proceedings of ACL 2022*. [\[pdf\]](#)
- [11] **Read Top News First: A Document Reordering Approach for Multi-document News Summarization**  
C. Zhao\*, T. Huang\*, S. Basu Roy Chowdhury, M. Chandrasekaran, K. McKeown and S. Chaturvedi  
*Proceedings of ACL Findings 2022 (short)*. [\[pdf\]](#)
- [10] **Adversarial Scrubbing of Demographic Information for Text Classification**  
S. Basu Roy Chowdhury, S. Ghosh, Y. Li, J. Oliva, S. Srivastava and S. Chaturvedi  
*Proceedings of EMNLP 2021*. [\[pdf\]](#)
- [9] **Is Everything in Order? A Simple Way to Order Sentences**  
S. Basu Roy Chowdhury\*, F. Brahman\* and S. Chaturvedi  
*Proceedings of EMNLP 2021*. [\[pdf\]](#)
- [8] **Learning beyond datasets: Knowledge Graph Augmented neural networks for NLP**  
K.M. Annervaz\*, S. Basu Roy Chowdhury\* and A. Dukkipati  
*Proceedings of NAACL 2018 (Oral)*. [\[pdf\]](#)

Other refereed publications:

- [7] **Does Commonsense help in detecting Sarcasm?**  
S. Basu Roy Chowdhury and S. Chaturvedi  
*Proceedings of Insights from Negative Results in NLP workshop*, EMNLP 2021. [\[pdf\]](#)
- [6] **Towards efficient data normalization using grammar-based parsing**  
S. Basu Roy Chowdhury, A. Mishra and A. Banerjee  
*Proceedings of Microsoft Journal of Applied Research*, MSJAR 2020. [\[pdf\]](#)
- [5] **Instance-based Inductive Deep Transfer Learning by Cross-Dataset Querying with LSH**  
S. Basu Roy Chowdhury, K.M. Annervaz and A. Dukkipati.  
*Proceedings of DeepLo Workshop*, EMNLP 2019. [\[pdf\]](#)
- [4] **AdGAP: Advanced Global Average Pooling**  
A. Ghosh, B. Bhattacharya\* and S. Basu Roy Chowdhury\*  
*Proceedings of Student Abstract and Poster Program*, AAAI 2018. [\[pdf\]](#)
- [3] **Training Autoencoders in Sparse Domain**  
B. Bhattacharya, A. Ghosh\* and S. Basu Roy Chowdhury\*  
*Proceedings of Student Abstract and Poster Program*, AAAI 2018. [\[pdf\]](#)
- [2] **Handwriting Profiling using Generative Adversarial Networks**  
A. Ghosh\*, B. Bhattacharya\* and S. Basu Roy Chowdhury\*  
*Proceedings of Student Abstract and Poster Program*, AAAI 2017. [\[pdf\]](#)
- [1] **SAD-GAN: Synthetic Autonomous Driving using Generative Adversarial Networks**  
A. Ghosh\*, B. Bhattacharya\* and S. Basu Roy Chowdhury\*  
*Proceedings of DLAI Workshop*, NeurIPS 2016. [\[pdf\]](#)

(\* = equal contribution)

**Theses:**

- [1] **Lung Cancer segmentation in 3D CBCT Images**  
Advisor: Prof. [Jayanta Mukhopadhyay](#)  
M.Tech. Thesis, IIT Kharagpur [\[pdf\]](#)

## Research Experience

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<b>Statistics and Machine Learning Group</b> , IISc Research Intern, Topic: Low Resource NLP Advisor: Prof. <a href="#">Ambedkar Dukkipati</a>	(May 2017 - Apr 2018)
<b>Accenture Technologies Lab</b> (ATL) Research Intern, Topic: Knowledge graph enhanced NLP Advisor: <a href="#">K. M. Annervaz</a> (ATL), Prof. <a href="#">Ambedkar Dukkipati</a> , (IISc)	(May 2017 - Jul 2017)
<b>Visual Information Processing Lab</b> - IIT Kharagpur Undergraduate Researcher, Topic: Lung Cancer Segmentation in 3D CBCT Advisor: Prof. <a href="#">Jayanta Mukhopadhyay</a>	(Jul 2016 - May 2018)
<b>National Brain Research Centre</b> - Gurgaon, India IAS Summer Fellow, Topic: Image Processing in MRI scans Advisor: Prof. <a href="#">Pravat Mandal</a>	(May 2015 - Jul 2015)

## Talks

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‘Learning Fair Representations For Equitable ML’, IVLC Seminar, UNC CH	(Jan 2023)
‘Adversarial Debiasing in NLP’, NLP Course, UNC CH	(Apr 2022)
‘Probabilistically grounded word embeddings’, Bing paper reading forum, <i>Microsoft</i>	(Nov 2019)
‘Secure Machine Learning’, <i>Apple India Research Forum</i>	(Apr 2019)

## Professional Service/ Teaching

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<b>• Program Committee Member/ Reviewer</b>	
AAAI Conference on Artificial Intelligence, ACL	2023
ACL Rolling Review, EMNLP	2022, 2021
<a href="#">Narrative Understanding Workshop</a> , NAACL	2022, 2021
2 <sup>nd</sup> workshop on <a href="#">Insights from Negative Results in NLP</a> , EMNLP	2021
<b>• Teaching Assistant</b>	
(EE21101) Signals and Networks Lab, IIT Kharagpur	2018
(EE19001) Electrical Technology Lab, IIT Kharagpur	2017

## Academic Achievements

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• Student Volunteer Award, ACL 2022 ( <i>declined</i> )	2022
• Travel Award from GPSG, UNC Chapel Hill for EMNLP 2021 ( <i>declined</i> )	2021
• All India Rank 7 (EECS) - Nationwide Education & Scholarship Test (NEST - II).	2017
• ACM-ICPC Asia-Chennai Regionals - Rank 33/1100	2015
• IAS Summer Research Fellowship - National Brain Research Center	2015
• INSPIRE Scholarship - Top 1 percentile in ISC (Grade 12).	2013
• Top ranks - JEE (Mains, Advanced): 99+ percentile, Top 1% in ISCE & ISC	2013

## Miscellaneous Activities

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- *Winner* of the WaterAid Marathon Hyderabad - 5km category 2019
- *Best Innovation Award* - Apple EMEA Hackathon 2018
- *Special Mention in Technology GC* - Graduating batch LBS Hall. 2018
- *Silver-medal* winning Data Analytics team - Inter-hostel GC 2017
- *Gold-medal* winning Hardware Modeling team- Inter-hostel GC 2015
- 5<sup>th</sup> year distinction in *Fine Arts* and Painting - All India Art and Crafts Society 2010