

SABYASACHI SAHOO

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EDUCATION

MILA & Université Laval Ph.D. Student	2021 - Present
Indian Institute of Science (IISc), Bangalore M. Tech. Computational Science Department of Computational & Data Sciences (CDS)	2014 - 2016 CGPA: 6.3 / 8 (top 5)
Sardar Vallabhbhai National Institute of Technology (SVNIT), Surat Bachelor of Technology - Mechanical Mechanical Engineering Department	2010 - 2014 CGPA: 7.52 / 10

RESEARCH EXPERIENCE

Research Assistant, MILA & Université Laval Advisor : Prof. Christian Gagné, MILA & Université Laval Co-Advisor : Prof. Frédéric Precioso, INRIA & Université Côte d'Azur.	Aug 2021 - Present
Research Associate, Machine Learning Lab, IISc Advisor : Prof. Chiranjib Bhattacharyya	Feb 2019 - Aug 2021
<ul style="list-style-type: none">Broadly work on improving robust machine learning for autonomous driving systems.Funded by DEEL project.	
Deep Learning Engineer, Donut Research Labs Supervisor : Latha Iyer (Machine Learning R&D group)	Jun 2018 - Feb 2019
<ul style="list-style-type: none">Worked on NLP research problems like extreme text classification and text normalization.Led and deployed brand-name text-normalization project for Walmart US.Also, worked on object and text detection on product images.Mentored software engineers and interns.	
Research Student, Middleware and Runtime Systems Lab, IISc Advisor : Prof. Sathish S. Vadhiyar	Aug 2015 - Jul 2016
<ul style="list-style-type: none">Proposed a novel hierarchical partitioning-based task mapping algorithm which resulted in about 40% reduction in communication times on molecular dynamics benchmark datasets on Cray XC40 supercomputer.Awarded distinction for my masters' thesis.	
Research Student, Computational and Data Sciences, IISc	Aug 2014 - Jul 2015
<ul style="list-style-type: none">Worked on extracting semantic context in CNNs with Prof. R. Venkatesh Babu and Prof. Partha Pratim Talukdar.Built a hybrid parallel implementation of OpenMP and CUDA for Travelling Salesman Problem with Prof. Sathish S. Vadhiyar.Worked on an optimal diet problem project with Prof. Phaneendra K. Yalavarthy.	

PUBLICATIONS

- “XraySetu : AI driven Xray Interpretation for Doctors via WhatsApp”.
The Journal of the American Medical Association. (August 2021). (journal submission) [demo, pdf, www]
Sabyasachi Sahoo, Siva Teja Kakileti, Rachit Shah, Mariamma Antony, Chiranjib Bhattacharyya, Geetha Manjunath.
- “DSLR : Dynamic to Static LiDAR scan Reconstruction using adversarially trained autoencoder”. AAAI Conference on Artificial Intelligence 2021. (Feb 2021). [pdf, www]
Prashant Kumar*, **Sabyasachi Sahoo***, Vanshil Shah, Vineetha Kondameedi, Abhinav Jain, Akshaj Verma, Chiranjib Bhattacharyya, Vinay V.
- “Hierarchical Task Mapping on Dragonfly topology for scaling Molecular Dynamics”.
Masters Thesis Book. (July 2016). [pdf, www]
Sabyasachi Sahoo, Sathish S. Vadhiyar.

POSTERS AND PREPRINTS

- “Towards Understanding and Comparing Adversarial Robustness for Local Interpretable Methods”. Preprint. (July 2021). [pdf, www]
Gaurav Parashar*, **Sabyasachi Sahoo**, Chiranjib Bhattacharyya.
- “An Approach For Accurate Sceneflow Prediction For LiDAR-based Sensors.”. Preprint. (July 2020). [pdf, www]
Dhiraj Shanbag, **Sabyasachi Sahoo**, Chiranjib Bhattacharyya, Vinay V.
- “FAIR : Frugal ADAS for Indian Roads”. Preprint. (May 2020). [pdf, www]
Vineetha Kondameedi, Santosh Shet, Akshaj Verma, **Sabyasachi Sahoo**, Prashant Kumar, Chiranjib Bhattacharyya, Soma Biswas.
- “Proximal pose search for adapting SLAM in dynamic environments on slow moving UGVs”. 3rd Cyber-Physical Systems Symposium. Poster. (July 2019). [pdf, www]
Sabyasachi Sahoo, Prashant Kumar, Chiranjib Bhattacharyya.
- “Establishing Semantic relationships among object classes using Deep Networks to Image Classification”. Preprint. (May 2015). [pdf, www]
Sabyasachi Sahoo, Vineetha Kondameedi, Srinivas Kruthiventi S. S., R. Venkatesh Babu, Partha Pratim Talukdar.

ONGOING RESEARCH WORKS

- “Improving Automatic Concept Extraction on Chest X-Rays”. [www]
Rachit Shah, **Sabyasachi Sahoo**, Abhinav Jain, Chiranjib Bhattacharyya.
- “Unpaired LiDAR to LiDAR translation”. [www]
Siddharth Sanghavi, Tezuesh Varshney, **Sabyasachi Sahoo**, Chiranjib Bhattacharyya.
- “DCT-VAE: Capturing Low level and High Level features for image generation”. [www]
Tezuesh Varshney, **Sabyasachi Sahoo**, Chiranjib Bhattacharyya.
- “Towards Understanding Domain Adaptation quantitatively”. [www]
Akshaj Verma*, **Sabyasachi Sahoo**, Chiranjib Bhattacharyya.

ENGINEERING EXPERIENCE

Software Engineer II, NVIDIA

Aug 2016 - May 2018

Supervisors : [Raghavendra VK](#) and [Ravi Chandra SV](#)

- Owned display module and was Person-In-Charge for Device Tree on all self-driving embedded-system platforms.
- Led Xavier Chip Bringup for display and device tree modules.
- Mentored software interns.

* equal contribution

TEACHING AND LEADERSHIP ROLES

- **Research Mentor, SHARE Research Labs** : Teaching and mentoring students on the platform for working towards a research paper for top-tier conferences.
- **ML/Autonomous Navigation Paper Reading Group, IISc** : Conducted and delivered talks on latest machine learning and autonomous navigation research papers. [[youtube](#)]
- **Deep Learning Brainstorming Sessions, Donut Research Labs** : Conducted and taught weekly sessions on latest deep learning research and engineering pipelines.
- **Placement Coordinator, IISc** : Invited, organized and coordinated on-campus placement for numerous MNCs and startups.
- **Head Coordinator Technical Events, SVNIT** : Formulated, organized, and headed various technical events for the technical college festival “Mindbend 2013”.

HONORS AND AWARDS

- Ranked Top 5 in class (CDS 2014-16, IISc)
- Awarded distinction for masters' thesis
- NIPS 2017 Challenge ([winner](#)) [[www](#)]
- SO1 Customer Basket Prediction (3rd) [[www](#)]
- Deep Traffic for self driving car (finalist) [[www](#)]

PERSONAL PROJECTS

- Depth Map for Image Classification [[www](#)]
- Car Image Masking [[www](#)]
- Text Normalisation for English [[www](#)]
- Paraphrase detection on Quora questions [[www](#)]

OTHER ACTIVITIES

- Selected for Oxford Machine Learning ([OxML-2020](#)) Summer School, Deep Learning Reinforcement Learning ([DLRL-2020](#)) Summer School, and Eastern European Machine Learning ([EEML-2020](#)) Summer School.
- [ICML 2020](#) Conference Volunteer.
- State Level Lawn Tennis and Basketball player.

OUR WORK IN NEWS

- XraySetu is covered by [NDTV](#), [Gadgets Now](#), [mint](#), [Hindustan Times](#), [Business Standard](#), [Economic Times](#), [ET HealthWorld](#), [KnockSense](#), [Bangalore Mirror](#), [Jagran](#), [Zee News Hindi](#), and [Prasar Bharati](#) (video).
- XraySetu is endorsed by Department of Science and Technology, Government of India [here](#).
- COVID-SWIFT (previous version of XraySetu) is covered by [The Hindu](#), and [The Times of India](#).
- DSLR features on [arXiv Daily](#) and [DeepAI](#).