

# Dipam Paul

FINAL YEAR UNDERGRADUATE, ECE, KIIT UNIVERSITY

AL-124, Sector 2  
Saltlake, Kolkata, India  
dipampaul17@gmail.com | 1704265@kiit.ac.in  
Webpage : [thisisdipam.github.io/](https://thisisdipam.github.io/)  
Github : [github.com/dipampaul17/](https://github.com/dipampaul17/)  
+91-87-773-71098

## EDUCATION

**Kalinga Institute of Industrial Technology**, Bhubaneswar, India  
*Bachelor of Technology*, Electronics and Telecommunication Engineering,  
**GPA: 9.15/10** (Overall) *May' 17 - June' 21*

## RESEARCH INTERESTS

Deep Learning, Computer Vision, Medical Imaging, Deep Generative Models, Representation Learning, Continual Learning, Probabilistic Modeling, and Intelligence Theory.

## PUBLICATIONS

**Dipam Paul**, Alankrita Tewari, and Imon Banerjee, "On the detection between Morphological Qualities of Sperm Cellular Images leveraging cDCGAN and Transfer Learning", Workshop Paper, *IEEE Conference on Computer Vision and Pattern Recognition (CVPR'21)* [Under Review]

**Dipam Paul**, Alankrita Tewari, and Imon Banerjee, "Super Learner Model to Detect Abnormalities - OCT and blood smear imaging case studies", *Trustworthy AI for Healthcare, Thirty-Fifth AAAI Conference on Artificial Intelligence (AAAI'21)* [Paper]

**Dipam Paul**, Alankrita Tewari, and Imon Banerjee, "Boosting Classification Accuracy of Fertile Sperm Cell Images leveraging cDCGAN", Workshop Paper, *International Conference on Learning Representations (ICLR'21)* [Under Review]

**Dipam Paul**, Alankrita Tewari, Sourodip Ghosh, and K. C. Santosh, "OCTx: Ensembled Deep Learning Model to Detect Retinal Disorders", *2020 IEEE 33<sup>rd</sup> International Symposium on Computer-Based Medical Systems (CBMS'20)*, Rochester, Minnesota [Paper]

**Dipam Paul**, Alankrita Tewari, Sourodip Ghosh, and Sambit Prasad Kar, "MalariaX: Ensembled Neural Network Model to detect Parasitized Malaria from Cellular Images", Submitted, *SPIE Journal of Medical Imaging* [Pre-print]

**Dipam Paul**, Prasant Kumar Pattnaik, and Proshikshya Mukherjee, "A Robust Approach with Text Analytics for Bengali Digit Recognition Using Machine Learning", *Studies in Big Data, Springer Nature Singapore* [Paper]

## RESEARCH EXPERIENCE

- Research Assistant, Carnegie Mellon University**  
*Supervisor: Dr. Min Xu (Xu Lab)* *Oct' 2020 - Present*  
- Researching on areas of Object Detection of macromolecules utilising 3D Cryo-ET Data. Additionally, worked on Continual Learning with a special focus on solving the Catastrophic Interference problem in Dynamically Expandable Networks.
- Research Assistant, Emory University**  
*Supervisor: Dr. Imon Banerjee (Banerjee Lab)* *Aug' 2020 - Present*  
- Worked on the design and creation of a Deep Learning algorithm to solve Deep Brain Stimulation (DBS) for patients with Parkinson's disease.
- Research Intern, Georgia Tech**  
*Supervisor: Dr. Eva Dyer (NerDS Lab)* *May' 2020 - Aug' 2020*  
- Worked on the design of a neural network for pairwise or triplet ranking losses to learn a space to embed Brain Imagery. Additionally, worked on the creation of a perceptual ranking dataset to use to train the model and quantification of model performance.
- Research Intern, Indian Institute of Technology, Bombay**  
*Supervisor: Dr. Amit Sethi (MeDAL Lab)* *Apr' 2020 - Aug' 2020*  
- Collaborated on a landmark project concerning the detection of COVID-19 from a limited number of Chest X-ray and CT Images. Primarily worked with semi-supervised and self-supervised learning techniques such as Variational Autoencoders and SimCLR.
- Project Intern, Indian Institute of Management, Ahmedabad**  
*Supervisor: Dr. Ankur Sarin* *Dec' 2018 - Jan' 2019*  
- Worked on a project to implement Right to Education under **The Ministry of Human Resource Development, Govt. of India**. Led field trips and submitted a practicum report on the advancement of the project.

CONFERENCES & TALKS	<b>FOSSASIA Global Summit 2021</b> <i>Speaker/Presenter, Singapore (Mar' 2021)</i>	<a href="#">[Speaker Profile]</a>
	<b>PyData Global 2020</b> <i>Speaker/Presenter, Menlo Park, California (Nov' 2020)</i>	<a href="#">[Speaker Profile]</a>
	<b>Conference on Machine Intelligence in Medical Imaging 2020</b> <i>Speaker/Presenter, Society for Imaging Informatics in Medicine, (Oct' 2020)</i>	<a href="#">[Speaker Profile]</a>
	<b>PyCon (Python Conference) Australia 2020</b> <i>Speaker/Presenter, Adelaide, Australia (Sep' 2020)</i>	<a href="#">[Speaker Profile]</a>
	<b>PyCon (Python Conference) USA 2020</b> <i>Speaker/Presenter, Pittsburgh, Pennsylvania (Apr' 2020)</i>	<a href="#">[Speaker Profile]</a>
	<b>Harvard US-India Initiative</b> - Delegate, Mumbai, India (Jun' 2020) - One among 40 students selected across India.	
	<b>PyCon (Python Conference) India 2019</b> <i>Speaker/Presenter, Chennai, India (Oct' 2019)</i>	<a href="#">[Speaker Profile]</a>
	<b>PyCon (Python Conference) USA 2019</b> <i>Speaker/Presenter, Cleveland, Ohio (May' 2019)</i> - Youngest presenter at the conference.	<a href="#">[Speaker Profile]</a>
OTHER RESEARCH PROJECTS	<b>Generating arXiv citation graph with Recurrent Neural Networks</b> <a href="#">[Project Report]</a>	Nov' 20
	- A novel pipeline which employs a combination of traditional heuristics and modern deep learning methods to find the list of papers cited by an article.	
	<b>Corroborating On the Robustness of Neural Networks</b> <a href="#">[Project Report]</a>	Feb' 20
	- A sound and precise automated verifier for certifying robustness of neural networks based on Zonotope abstraction.	
	<b>Disingenuous Questions Classification from Quora</b> <a href="#">[Code]</a>	Dec' 19
	- Deep learning for detecting insincere questions posted on Quora. This will aid to improve online conversations on Quora by impeding toxic content.	
SKILLS	<b>Languages:</b> <i>Proficient:</i> Python, C, C++ <i>Familiar:</i> SQL, MATLAB <b>Deep Learning Frameworks:</b> TensorFlow, PyTorch, Keras <b>Data Science Libraries:</b> OpenCV, NumPy, Scikit-Learn, Pandas, Pillow, Seaborn, SciPy <b>Utilities:</b> Git, Linux Shell, MS-Office, L <sup>A</sup> T <sub>E</sub> X, Microsoft Azure-ML Studio	
ACADEMIC RE- SPONSIBILITIES, CERTIFICATION & AWARDS	Served as a <b>Reviewer</b> at <b>Science and Engineering of Deep Learning Workshop, ICLR 2021</b>	
	<b>Dataquest.io</b> (Recipient of the 'Data for Social Good' scholarship.)	Dec' 2019 - Apr' 2020
	<b>Intel Corporation</b> (Recipient of Tech Scholarship at Intel Edge AI)	Dec' 2019 - Apr' 2020
	<b>Bertelsmann SE Co. KGaA</b> (Recipient of Tech Scholarship)	Nov' 2019 - Mar' 2020
	Certification: Deep Learning Specialization (5 Courses) Certification: Computational Neuroscience	deeplearning.ai University of Washington
MENTORSHIP ROLES	<b>Project Mentor</b> <i>KIIT-TBI, KIIT University</i>	Jan' 20 - Mar' 20
	- Mentored a class of 30 students from various disciplines through the fundamentals of Deep Learning.	
	- Conducted lectures on a weekly basis. Weekly assignments were designed and graded.	
	<b>Coordinator</b> <i>KIIT Model UN Society</i>	Jan' 2019 - Dec' 19
	- Established in 2013, it is the first Model UN Society in South-Asia.	
	- Mentored a group of 40 students enthusiastic about Model UN (on a rolling basis).	
	- Led the team to participate and win laurels in and across various parts of India.	