

Dipam Paul

LinkedIn: <https://www.linkedin.com/in/dipam-paul-36672b15b/>
Github: github.com/dipampaul17

Email: dipampaul17@gmail.com
Mobile: +91-9007497740/8777371098

RESEARCH INTERESTS

Machine Learning, Deep Learning, Medical Imaging, Probability and Statistics.

EDUCATION

Kalinga Institute of Industrial Technology

Bachelor of Technology - Electronics and Telecommunication Engineering; **CGPA: 9.11/10.0**

Bhubaneswar, India

2017-2021

Relevant Courses: Data Structures and Algorithms (A), Computational Intelligence (A), Introduction to Software Engineering (A), Signals and Systems (A), Digital Signal Processing (A), Adaptive Systems and Signal Processing (A), Data Communication and Networking (A)

Bharatiya Vidya Bhavan

High School, XII; 86%

Kolkata, India

2017

Bharatiya Vidya Bhavan

High School, X; CGPA: 10.0/10.0

Kolkata, India

2015

EXPERIENCE

Carnegie Mellon University - School of Computer Science

Research Assistant - Xu Lab

Pittsburgh, Pennsylvania

Oct, 2020 - Present

- Worked under the tutelage of Dr. Min Xu, Dept. of Computational Biology, School of Computer Science, Carnegie Mellon University. Primarily worked on Object Detection problems concerning 3D-Cryo ET data and areas of Deep Active Learning with focus on Dynamically Expandable Networks.

Emory University - School of Medicine

Research Assistant - Banerjee Lab

Atlanta, Georgia

Aug, 2020 - Present

- Worked under the tutelage of Dr. Imon Banerjee, Dept. of BMI, Radiology - Emory University and Stanford University. Worked on the design and creation of an ML algorithm to solve Deep Brain Stimulation (DBS) for patients with Parkinson's disease.

Georgia Tech - Wallace H. Coulter Department of Biomedical Engineering

Research Intern - NerDS Lab

Atlanta, Georgia

May, 2020 - Aug, 2020

- Worked under the tutelage of Dr. Eva Dyer, Dept. of ECE, BME, GaTech. 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.

Indian Institute of Technology, Bombay

Research Intern - MeDAL Lab

Mumbai, India

Apr, 2020 - Aug, 2020

- Worked under the tutelage of Dr. Amit Sethi, Dept. of EE, IIT-B. Collaborated on a landmark project concerning the detection of COVID-19 from a limited number of Chest X-ray Images. Primarily worked with semi-supervised and self-supervised learning techniques such as Variational Autoencoder and SimCLR.

Indian Institute of Management, Ahmedabad

Project Intern

Ahmedabad, India

Dec, 2018 - Jan, 2019

- Worked under the tutelage of Dr. Ankur Sarin, Dept. of Public Systems, IIM-A. 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.

PUBLICATIONS

Super Learner Model to Detect Abnormalities - OCT and blood smear imaging case studies

[Paper] [Presented, Trustworthy AI for Healthcare, Thirty-Fifth AAAI Conference on Artificial Intelligence (AAAI-21)]

OCTx: Ensembled Deep Learning Model to Detect Retinal Disorders

[Paper] [Presented, IEEE 33rd International Symposium on Computer Based Medical Systems (Rochester, Minnesota)]

On the Detection and Classification between Morphological quality of Sperm Images

[Paper][Shafiee Lab, Harvard Medical School] [Yet to be published]

A Robust Approach With Text Analytics for Bengali Digit Recognition

[Paper] [Accepted, *Studies in Big Data*, Springer Nature Singapore]

A Novel Technique Towards the Detection of Polycystic Ovarian Syndrome (PCOS) using AI

[Paper] [Submitted, *ACM Computing Survey*]

LesionNet: A Novel Approach in Deconstructing and Detecting Skin Cancer

[Paper] [Under Review, *IEEE Transactions on Medical Imaging*]

MalariaX: Ensembled Neural Network Model to detect Parasitized Malaria from Cellular Images

[Pre-Print] [Submitted, *SPIE Journal of Medical Imaging*]

CONFERENCES/TALKS

PyData Global 2020 [Speaker Profile] <i>Speaker/Presenter</i> <ul style="list-style-type: none">◦ Talk on "Ensemble-X: Your personal strataGEM to build Ensembled Deep Learning Models for Medical Imaging".	Menlo Park, California <i>Nov, 2020</i>
PyCon (Python Conference) Australia 2020 [Speaker Profile] <i>Speaker/Presenter</i> <ul style="list-style-type: none">◦ Talk on "Ensemble-X: Your personal strataGEM to build Ensembled Deep Learning Models for Medical Imaging".	Adelaide, Australia <i>Sep, 2020</i>
PyCon (Python Conference) USA 2020 [Speaker Profile] <i>Speaker/Presenter</i> <ul style="list-style-type: none">◦ Presentation on "Using Python for early detection of Parkinson's Disease".	Pittsburgh, Pennsylvania <i>Apr, 2020</i>
Harvard US-India Initiative <i>Delegate</i> <ul style="list-style-type: none">◦ One among 40 students selected across India.	Mumbai, India <i>Jan, 2020</i>
PyCon (Python Conference) India 2019 [Speaker Profile] <i>Speaker/Presenter</i> <ul style="list-style-type: none">◦ Presented on "Using Python for detection of Diabetic Retinopathy and Diabetic Macular Edema simultaneously".	Chennai, India <i>Oct, 2019</i>
PyCon (Python Conference) USA 2019 [Speaker Profile] <i>Speaker/Presenter</i> <ul style="list-style-type: none">◦ Presentation on Using Python for Medical Imaging.◦ Youngest presenter at the conference.	Cleveland, Ohio <i>May, 2019</i>

OTHER SELECTED PUBLISHABLE PROJECTS

One Shot Learning

- Achieved 92% accuracy on Omniglot dataset using Siamese Neural Network with Bayesian Optimization.

Auto-Encoding Variational Bayes [Code]

Markov Chain Based Probabilistic Model To Generate Lyrics and Rap Music [Code]

Recommender System using Bayesian Probabilistic Matrix Factorization and Markov Chain Monte Carlo (MCMC) [Code]

SKILLS SUMMARY

Languages: *Proficient:* Python, C, C++ *Familiar:* SQL, MATLAB

Deep Learning Frameworks: TensorFlow, PyTorch, OpenCV.

Data Science Frameworks: NumPy, Scikit-Learn, Pandas, Pillow, Seaborn, SciPy, Keras.

Utilities: MS-Office, L^AT_EX, Microsoft Azure-ML Studio.

MENTORSHIP ROLES

Project Mentor <i>KIIT-TBI, KIIT University</i> <ul style="list-style-type: none">◦ Mentored a class of 30 students from various disciplines through the fundamentals of Machine Learning.◦ Conducted lectures on a weekly basis.◦ Weekly assignments were designed and graded.	Bhubaneswar, India <i>Jan, 2020 - Mar, 2020</i>
Coordinator <i>KIIT Model UN Society</i> <ul style="list-style-type: none">◦ 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.	Bhubaneswar, India <i>Jan, 2019 - Present</i>
Under-Secretary General (Academics) <i>KIIT International Model UN 2019</i> <ul style="list-style-type: none">◦ Established in 2014, it is the largest Model United Nations in Asia and one of the largest in the world.◦ Mentored and led a team of 15 people to organise and manage the academic dimensions of the conference.◦ Conducted Academic Workshops on Model UN in various reputed institutions in and across India.	Bhubaneswar, India <i>June, 2019 - Present</i>

CERTIFICATION/AWARDS

Dataquest.io (Recipient of the 'Data for Social Good' scholarship.)	Dec, 2019 - Apr, 2020
Intel Corporation (Recipient of Tech Scholarship at Intel® Edge AI)	Dec, 2019 - Apr, 2020
Bertelsmann SE & Co. KGaA (Recipient of Tech Scholarship)	Nov, 2019 - Mar, 2020
• Certification: Deep Learning Specialization (5 Courses)	deeplearning.ai
• Certification: Strategic Business Analytics	ESSEC Business School
• Certification: Executive Data Science	Johns Hopkins University
• Certification: Computational Neuroscience	University of Washington
• Certification: How Google Does Machine Learning	Google Cloud
• IEEE	Student Member
• International Functional Electrical Stimulation Society	Member
• E-fellows.net Scholarship	E-fellows.net GmbH Co. KG