

SOUMYAJYOTI DEY

◇ soumyajyoti.cse.rs@jadavpuruniversity.in ◇

RESEARCH AREAS:

Medical Image Processing, Digital Pathology Image Analysis, Deep Learning, Machine Learning, and Computer Vision.

EDUCATION

Jadavpur University, India

February 2020- Present

Doctor of Philosophy(PhD Engineering)

Department of Computer Science and Engineering

Percentage: 87.5%(1st class)

Courses: Research Methodology, Artificial Intelligence,
Pattern Recognition, Term Paper(Data Augmentation using Deep Learning)

Jadavpur University, India

September 2014- September 2017

Master Of Computer Application

Department of Computer Science and Engineering

CGPA: 7.78(1st class)

Asutosh College(University Of Calcutta), India

July 2011 - June 2014

Bachelor of Science(Hons) in Mathematics

Department Of Mathematics

Percentage: 60.88%(1st class Hons.)

Sarada Vidyapith, Kolkata

West Bengal Council of Higher Secondary Education

May 2010 - May 2011

High School(12th standard)

Physics, Chemistry, Mathematics

Percentage: 80.6%

Sarada Vidyapith, Kolkata

West Bengal Board Of Secondary Education

May 2008 - May 2009

(10th standard)

Percentage: 84.25%

PUBLICATIONS

List of Journals:

1. **S. Dey**, S. Mitra, S. Chakraborty, D. Mondal, M. Nasipuri, and N. Das, GC-EnC: A Copula based ensemble of CNNs for malignancy identification in breast histopathology and cytology images, Computers in Biology and Medicine. Elsevier BV, p. 106329, Nov. 2022. doi: 10.1016/j.compbiomed.2022.106329. (**impact factor : 7.7**)
URL:<https://doi.org/10.1016/j.compbiomed.2022.106329>

GitHub: <https://github.com/DVLP-CMATERJU/Gaussian-Copula-Ensemble>

2. S. Mitra, N. Das, **S. Dey**, S. Chakraborty, M. Nasipuri, and M. K. Naskar, Cytology Image Analysis Techniques Toward Automation, ACM Computing Surveys, vol. 54, no. 3. Association for Computing Machinery (ACM), pp. 141, Apr. 30, 2022. doi: 10.1145/3447238. (**impact factor: 16.6**)
URL: <https://dl.acm.org/doi/10.1145/3447238>.

List of Conferences:

1. **Dey S**, S Nasipuri, O Ghosh, S Chakraborty, D Mondal, N Das, "Malignancy Identification From Cytology Images Using Deep Optimal Features", accepted at International Conference on Data, Electronics and Computing(ICDEC-2022).

GitHub: https://github.com/DVLP-CMATERJU/Deep-Optimal_Features_Malignancy_Identification

2. **S. Dey**, S. Das, S. Ghosh, S. Mitra, S. Chakrabarty, and N. Das, SynCGAN: Using Learnable Class Specific Priors to Generate Synthetic Data for Improving Classifier Performance on Cytological Images, Communications in Computer and Information Science. Springer Singapore, pp. 3242, 2020. doi: 10.1007/978-981-15-8697-2.3.
URL: https://link.springer.com/chapter/10.1007/978-981-15-8697-2_3
3. S. Mitra, **S. Dey**, N. Das, S. Chakrabarty, M. Nasipuri, and M. K. Naskar, Identification of Benign and Malignant Cells from Cytological Images Using Superpixel Based Segmentation Approach, Social Transformation Digital Way. Springer Singapore, pp. 257269, 2018. doi: 10.1007/978-981-13-1343-1_24.
URL: https://link.springer.com/chapter/10.1007/978-981-13-1343-1_24
GitHub: https://github.com/DVLP-CMATERJU/Cytology_Segmentation_Superpixel

List of Book Chapters:

1. S. Mitra, **S. Dey**, N. Das, S. Chakrabarty, M. Nasipuri, and M. K. Naskar, Identification of Malignancy from Cytological Images Based on Superpixel and Convolutional Neural Networks, Studies in Computational Intelligence. Springer Singapore, pp. 103122, Apr. 24, 2019. doi: 10.1007/978-981-13-7334-3.8.
URL: https://link.springer.com/chapter/10.1007/978-981-13-7334-3_8

Presented Papers or Posters

1. Presented Poster entitled "**Identification of Ductal Carcinoma from Cytology Image using Deep Learning**" at Third Indian Symposium on Machine Learning (IndoML 2022), IIT Gandhinagar. (December, 2022)

WORK EXPERIENCE

1. **Position:** Visiting Research Scholar under **ACM India Anveshan Setu Fellowship**.
Organization: Indian Institute of Science(IISc), Bangalore, India
Duration: July, 2023 - August, 2023
Project Title: Leveraging Weak Supervision of tissue compartments to Improve Dense segmentation of Breast Histopathology Images.
2. **Position:** Senior Research Fellow on a Project- funded by Science and Engineering Research Board(SERB), Government of India.
Organization: Jadavpur University, Kolkata, India
Duration: 2021 - 2022
Project Title: Automatic Generation of Cytological Images to Augment Data for Diagnosis of Ductal Carcinoma Using DeepLearning
Project Details: https://github.com/DVLP-CMATERJU/JUCYT_V1
<http://nibarancse.jdvu.ac.in/projects/cytology/>
3. **Position:** Junior Research Fellow on a Project- funded by SERB, Government of India.
Organization: Jadavpur University, Kolkata, India
Duration: 2019 - 2021

ACHIEVEMENTS

1. Received **Anveshan Setu Fellowship-2023**, sponsored by **ACM India**
February, 2023
<https://india.acm.org/research/anveshan-setu#h-fellows-for-2023%E2%80%932024>
2. Received Travel Grant for participating "**Indian Symposium on Machine Learning (IndoML 2022)**", IIT Gandhinagar" 15-17th December, 2022

3. IEEE Xplore Challenge for Researchers in India

November-2020

9th Prize Winner all over India (<https://www.ieeexplorechallenge-india.com/>)

SKILL SET

- **Programming Languages:** C, C++, Python, MATLAB
- **Operating System:** Linux (Fedora, Ubuntu) , Windows (xp,7,10)
- **Python Libraries & Frameworks:** PyTorch, TensorFlow, SciPy, NumPy, Matplotlib, Pandas, Sklearn, Web Scraping-Beautiful Soup.
- **Software:** Latex, Microsoft Office(Word, Excel, Power Point)
- **Data Collection:** Expertise in Microscopic Image Data Collection using Trinocular Microscope.

COURSES:

1. **Apply Generative Adversarial Networks (GANs) - Coursera**
November 2020 , Grade: 100%
Certificate: <https://coursera.org/share/b3d6078899a69b329b89e1d6918852e3>
2. **AI for Medical Diagnosis - Coursera**
June 2020 , Grade: 94.33%
Certificate: <https://coursera.org/share/041f410ea90ab6f5f1482fb39cf59b7d>
3. **Improving Deep Neural Networks: Hyperparameter tuning, Regularization, and Optimization - Coursera**
June 2020, Grade: 94.25%
Certificate: <https://coursera.org/share/9490d57ff8e0ffa5a9091830bdc682f3>
4. **Neural Networks and Deep Learning - Coursera**
June 2020 , Grade: 94.30%
Certificate: <https://coursera.org/share/d0165b86964cbc5a6b9665e1969bb796>
5. **Programming for Everybody (Getting Started with Python) - Coursera**
June 2020 , Grade: 96.61%
Certificate: <https://coursera.org/share/9a038550767faa0374e89ef182f45375>

NATIONAL LEVEL EXAMINATION

1. Qualified **GATE 2020** in Computer Science and Information Technology.
2. Qualified **JAM 2014** in Mathematics.

SEMINAR AND WORKSHOPS ATTENDED

1. Third Indian Symposium on Machine Learning (IndoML 2022), December 15-17, 2022, IIT Gandhinagar.
2. "3-DAY WORKSHOP ON MACHINE LEARNING AND DATA ANALYTIC" Organized By: Department of Computer Science & Engineering, Jadavpur University held at Jadavpur University on 26th to 28th March 2019
3. 11th International Conference on Information Systems Security 2015 held at Jadavpur University on 17th December 2015
4. One week course on Foundations in Computer Science held at Jadavpur University on 24th to 31st May 2017

5. "International Online Workshop on New Trends in Fuzzy and Rough Set Theory and its Applications [FRSTA-2020]" organized by Manipal University, Jaipur on 25th – 29th September 2020.

POSITIONS OF RESPONSIBILITY

1. Reviewed papers for the conferences: COMSYS-2020, 2021, 2022; ICDSA 2021; ICDEC-2022; CALCON 2022; CBMS 2023.
2. Reviewer of the journal: SADHANA (Impact factor: 1.6).
3. Volunteer at ICDCN 2020.
4. Faculty Member of "*Six month Certified Course on Artificial Intelligence and Data Science*" offered by "Centre for Microprocessor Applications for Training, Education and Research"