Subhajit Maity

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Education

Jalpaiguri Government Engineering College (Autonomous) & Maulana Abul Kalam Azad University of Technology — *Jalpaiguri, India*

B.Tech. in Electronics & Communication Engineering — Aug. 2014 - Dec. 2018

GPA: 8.47/10

Courses: Linear Algebra, Calculus, Artificial Intelligence

Project: Infrared-based IOT for Domestic Consumer Grade Appliances

Baruipur High School, West Bengal Council of Higher Secondary Education — *Baruipur, India*

Higher Secondary Examination (10+2) in General Science — May. 2014

Percentage: 80.20%

Courses: Mathematics, Physics, Chemistry, Biology

Baruipur High School, West Bengal Board of Secondary Education — *Baruipur, India*

Madhyamik Examination (10) — May. 2012

Percentage: 82.79%

Experiences

Technology Innovation Hub, Indian Statistical Institute, Kolkata — *Kolkata, India*

Associate Research Engineer — Jun. 2022 - Present

Working on Object Detection, Speed Estimation from a video feed, License Plate Recognition, and Scene Text Recognition.

Projects: Traffic Surveillance for Overspeeding Vehicles and License Plate Recognition

Supervisor: Prof. Umapada Pal, CVPR Unit, Indian Statistical Institute, Kolkata

Tata Consultancy Services Limited — *Kolkata, India*

System Engineer — Nov. 2018 - Jan. 2021

Worked as a developer for Oracle Fusion Middleware technologies (SOA Suite, OSB) and as administrator for SSO products (Oracle IAM, OAM) along with OCI cloud administration and Linux administration.

Projects: Oracle Cloud Migration, Oracle Single Sign On development in OAM and IAM, Oracle SOA development and migration from 11g

National Institute of Technology, Silchar — *Silchar, India*

Research Intern — Jun. 2017 - Jul. 2017

Worked on classical image processing, natural language processing, Bayesian classifier, and image caption generation.

Project: Word Sense Disambiguation for Ambiguous Words using Visual Supervision

Supervisor: Prof. Koushik Guha, Dept. of ECE, National Institute of Technology, Silchar

Technical Skills

Programming	Python, Matlab, Java
Professional Libraries	PyTorch, Numpy, Matplotlib, Seaborn, Pandas, Keras, Tensorflow
Documentation & Typesetting	MS Office, LaTeX, Beamer
Languages	Bengali (Native), English (Professional Proficiency)

Publications

[1] **S. Maity***, S. Biswas*, et al. "SelfDocSeg: A Self-Supervised vision-based Approach towards Document Segmentation ," *International Conference on Document Analysis and Recognition (ICDAR)*, 2023. **(Oral)** [Link]

[2] **S. Maity**, S. Sarkar, et al. "Fault area detection in leaf diseases using k-means clustering ," *International Conference on Trends in Electronics and Informatics*, 1538-1542, 2018. [Link]

[3] **S. Maity**, R. K. Karsh. "Image Hash Minimization for Tamper Detection ," *International Conference on Advances in Pattern Recognition (ICAPR)*, 1-16, 2017. [Link]

Research Projects

Knowledge Distillation in Documents
Barcelona, Spain
Exploring Knowledge Distillation, Document Segmentation, Document Classification
May. 2023 - Present
Collaborator: Sanket Biswas, Computer Vision Center, Universitat Autònoma de Barcelona & Jordy Van Landeghem, KU Leuven

Self-Supervised Document Layout Analysis
Barcelona, Spain
Explored vision-based self-supervised learning for instance level segmentation of document layouts.
Jan. 2023 - Feb. 2023
Collaborator: Sanket Biswas & Prof. Josep Lladós, Computer Vision Center, Universitat Autònoma de Barcelona

Self-Supervised Object Detection
Kolkata, India
Explored self-supervised learning strategies and non-contrastive object-aware self-supervision for object detection and the scope of end-to-end self-supervision for object detection.
Aug. 2022 - Mar. 2023
Supervisor: Prof. Umapada Pal, CVPR Unit, Indian Statistical Institute, Kolkata & Prof. Saumik Bhattacharya, Dept. of Electronics and Electrical Communication Engineering, Indian Institute of Technology, Kharagpur

Vehicle Detection & Tracking with Speed Estimation & License Plate Recognition
Kolkata, India
Implemented object detection and vision-based tracking strategy for vehicle tracking in the traffic video feed, along with vision-based speed estimation strategy and license plate recognition system using scene-text super-resolution and text spotting.
Jun. 2022 - May. 2023
Supervisor: Prof. Umapada Pal, CVPR Unit, Indian Statistical Institute, Kolkata

Towards Faster Fine-Grained Sketch-based Image Retrieval
Guildford, UK
Explored knowledge distillation, gradient consensus, and reinforcement learning for efficient fine-grained sketch-based image retrieval in Triplet network architecture.
Aug. 2021 - Jul. 2022
Mentor: Ayan K. Bhunia, SketchX, CVSSP, University of Surrey

Image Forgery Localization with Hashless Strategy
Silchar, India
Explored Image Forgery Localization using auto-encoders and attention module.
Jan. 2021 - Jun. 2021
Mentor: Prof. R. K. Karsh, Dept. of ECE, National Institute of Technology, Silchar

Human Action Recognition for Activity Monitoring on FPGA
Kolkata, India
Implemented action recognition using skeletal structure detection and tracking with pose estimation and object detection for FPGA implementation.
Jan. 2021 - Aug. 2021
Supervisor: Prof. Swagata Mandal, Dept. of ECE, Jalpaiguri Govt. Engineering College & Dr. Satyabrata Maity, Calcutta University

Image Forgery Detection using Efficient Image Hash and Signatures
Silchar, India
Explored Image Forgery Detection using k-means clustering on visual features extracted SURF by constructing an efficient hash-based strategy.
Jul. 2017 - Dec. 2017
Mentor: Prof. R. K. Karsh, Dept. of ECE, National Institute of Technology, Silchar

Word Sense Disambiguation using Visual Information
Silchar, India
Investigated the scope of drawing distinctions between senses of ambiguous words using visual contexts. Strategized SIFT, and k-means clustering for Visual Word feature bank generation and explored Multinomial Naive Bayesian classifier for relevant environment image prediction.
Jun. 2017 - Jul. 2017
Mentor: Prof. Koushik Guha, Dept. of ECE, National Institute of Technology, Silchar

Leaf Disease Detection
Jalpaiguri, India
Explored Segmentation using k-Means Clustering for leaf disease detection
May. 2017 - Jan. 2018
Collaborator: Sanket Biswas, Computer Vision Center, Universitat Autònoma de Barcelona & Avinaba Tapadar, Qualcomm India Pvt. Ltd.

Awards and Honors

Mar. 2023 **Participation**: Attended "G20 Expo, 2nd Education Working Group Metting, G20 Summit 2023"
Amritsar, India

Volunteer Services

International Journal of Advances in Applied Sciences (IJAAS)
http://ijaas.iaescore.com
Peer Reviwer
Oct. 2021

9th International Conference on Advances in Pattern Recognition
Bangalore, India
Presentation / Attendance
Dec. 2017