Prayas Sanyal

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Google Scholar | LinkedIn | Webpage

Education

2019–2023 **Heritage Institute of Technology, Kolkata**
B.Tech (Honours) Electronics and Communication Engineering
GPA: 9.44/10 [Rank: 5/211] (Transcript)
Thesis: Feature Detection for Onset of Alzheimer's Disease from Cognitively Normal Individuals

2019 **South Point High School, Kolkata**
AISSCE, Grade 12, CBSE (Percentage: **89.4%**)
AISSE, Grade 10, CBSE (Percentage: **93.1%**)

Experience

Research

2022 - 2024 **Jadavpur University, Kolkata**
Research Associate - **Advisor**: Dr. Sanjoy Kumar Saha
Project: Semi-Supervised Disease Prediction from Retinal Fundus Images
– Curated a semi-supervised framework which locates disease manifestation in the retinal image; Extracted disease relevant RoIs such as blood vessels, macula and optic cup and disc, red channel residual maps for downstream analysis; F1 scores of 0.95 and 0.96 across two public datasets (JSIEC & RFMiD) covering diabetic retinopathy, hypertensive retinopathy, glaucoma, ARMD

2022 - 2023 **Heritage Institute of Technology, Kolkata**
Research Assistant - **Advisor**: Dr. Anindya Sen
Project: Temporal Study of Alzheimer's Disease Progression from Cognitively Normal
– Developed a wrapper pipeline in R to automatically extract tissue volumes - white matter, gray matter and cerebrospinal fluid for longitudinal analysis; Standard pre-processing on sMRI; intensity normalization, bias field correction, skull stripping and image registration

Industry

2024 - 2025 **Ernst & Young LLP**
Software Engineer
– C#, Angular and .NET developer: Responsible for developing features and maintaining full-stack web applications for automated financial management services

Publications

1 Prayas Sanyal, Srinjay Mukherjee, Arkapravo Das, Anindya Sen. "**Longitudinal Volumetric Study for the Progression of Alzheimer's Disease from Structural MRI**"
2024 IEEE International Conference on Computer Vision and Machine Intelligence (CVMI), Prayagraj, India, 2024 (**Best Paper Award for Computer Vision**) Paper Code

2 Rohan Banerjee, Rakhshanda Mujib, Prayas Sanyal, Tapabrata Chakraborti, Sanjoy Kumar Saha." **Pan-Ret: A Semi-supervised Framework for Scalable Detection of Pan-Retinal Diseases**" Medical & Biological Engineering & Computing (2024). Paper

3 Rohan Banerjee, Rakhshanda Mujib, Prayas Sanyal, Sanjoy Kumar Saha. "**Detecting ARMD from Retinal Fundus Image: An RoI-Based Approach**"
International Conference on Artificial Intelligence & Sustainable Computing (AISC 2024)

4 Ankan Basu, Jyotiraditya Roy*, Aditya Datta*, Prayas Sanyal*, Sumanta Banerjee. "**SolarTformer: A Transformer Based Deep Learning Approach for Short Term Solar Power Forecasting**" (In Submission)

Skills

Languages Python, C, C++, C#, LaTeX, R
Libraries NumPy, PyTorch, Tensorflow, FSL, Matplotlib, Seaborn; **Frameworks** Angular 18, .NET 7.0, Docker
Relevant Courses Digital Image Processing and Pattern Recognition, Data Structures, Object Oriented Programming, Intelligent Web and Big Data, Operating Sytems, Information Theory and Coding, DBMS, Advanced Numerical Methods, Signals and Systems, Digital Signal Processing, Microprocessors and Microcontrollers

References

Sanjoy Kumar Saha, Ph.D. | Professor of Computer Science, Jadavpur University
Anindya Sen, Ph.D. | Professor of Electronics and Communication, Heritage Institute of Technology