

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]
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 (* - equal contribution)

- 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, Rakshanda 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, Rakshanda 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 Learning Approach for Short Term Solar Power Forecasting**" (Under Review)

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 & Pattern Recognition, Data Structures, OOPs, Intelligent Web and Big Data, Operating Systems, Information Theory, DBMS, Advanced Numerical Methods, Digital Signal Processing

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