

Partha Sarathi Purkayastha

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Education

- 2020 – **B.E. Computer Science**, Birla Institute of Technology and Science, Pilani, India
2024 **CGPA: 9.80**. Coursework: Data Structures and Algorithms, Object Oriented Programming, Database Systems, Theory of Computation, Operating Systems, Computer Networks, Artificial Intelligence, Computer Graphics, Human Computer Interaction
- 2017 – **South Point School Guwahati for Secondary Education**, Assam, India
2019 **Percentage: 97.2%**.

Experience

- Jan'24 – **SWE Intern**, *SPRINKLR*, Gurgaon, India.
- Present
- Identified and resolved **memory leaks** throughout the codebase using **memlab**, resulting in a significant reduction of **10+**% in overall memory consumption
 - Implemented **Server-Side Rendering** (SSR) for components with comprehensive **end-to-end testing** using **Next.js** and **GraphQL**, facilitating dynamic rendering and achieving load time enhancements by **20+**%
 - Currently focused on enhancing system **performance** and **resiliency** through ongoing detection of **render blocking agents** and **optimization** of existing codes to **resolve potential errors** and application **crashes**
- Oct'22 – **Research Intern**, *BITS PILANI*, Pilani Campus, India.
- Dec'23
- Developed a tool for **manual annotation** of Fundus images, identifying lesions like **soft exudates**, **hard exudates**, **microaneurysms**, **hemorrhages**, and **neovascularization**
 - Collaborated with a local hospital, employing the tool to **create a dataset** of approximately **3,000 annotated Fundus image** entries.
 - Applied **Image Processing** techniques and trained **customized Deep Learning models** to **automate** the annotation tool's functionality, achieving **75+**% accuracy and **80+**% specificity.
- Supervisor: [Dr.Sundaresan Raman](#)**
- May'23 – **SWE Intern**, *UBER*, Hyderabad, India.
- Aug'23
- Developed an **end-to-end application** using **React.js**, **GraphQL**, and **GoLang** for handling various Credit Types within the company's portal, catering to the needs of over **2000** employees
 - Implemented the migration of data to a new database based on **MySQL**, establishing a **centralized data source** for financial transactions, ensuring security and transparency
 - **Automated the integration process** along with **end-to-end testing** for both the client-side and the server-side, significantly improving upon system reliability and **reducing** onboarding time by **2 months**
- Jan'23 – **Research Intern**, *MERCEDEZ-BENZ*, Bangalore, India.
- May'23
- Enhanced vehicle component design by training **customized VAE Models** for **controlled generation** of designs based on parameters provided
 - Utilized a **proprietary dataset** of **25,000+** data points to generate **diverse designs** and **pre-calculated heuristics** for comparison with existing resembling neighbors
 - Optimized product development through an **application-like website** for user-friendly access of the **deployed ML model** and **generating custom designs** for company research
- Supervisor: [Dr.Poonam Goyal](#)**

May'22 – **Summer Research Intern**, *JIO PLATFORMS*, Mumbai, India.

- Jul'22
 - Utilized **web scraping** techniques to efficiently download bulk images with specific keywords, manually annotating them to establish sample datasets for future automation
 - Improved and optimized the annotation process, devising a **pipeline** for **automated bounding box** dataset creation tailored to specific requirements
 - Trained a **customized YOLOv7 model** on diverse datasets, including a proprietary one, achieving over **90%** confidence in successfully distinguished objects and barriers from humans

Projects

Oct'23 – **Systemic Diabetic Retinopathy Analysis**, *BITS PILANI*, Pilani Campus, India.

- Dec'23
 - Developed an **open-use portal** for **Diabetic Retinopathy** analysis, focusing on **systemic factors** for research and testing
 - Conducted a comparative study on tabular data using techniques including **TabNet** and **DeepForests**, achieving a **successful model testing** accuracy of **80+**% across local hospitals in India and Hong Kong
- Supervisor:** [Dr.Sundaresan Raman](#)

Jan'23 – **Dynamic Third-Person Shooter Game Development**, *BITS PILANI*, Pilani Campus, India.

- May'23
 - Developed an **open-world third-person shooter game** in 3D using *C#* with missions, day-night cycles, and inventory for immersive gameplay
 - Integrated high-quality game assets created in **Blender**, utilizing **Unity** for fluid animations and **CineMachines** to enhance cinematic camera perspectives in the game environment

Oct'21 – **Text-Based Fake News Classification**, *BITS PILANI*, Pilani Campus, India.

- Dec'21
 - Researched and **reviewed** supervised learning classification methods to tackle online **misinformation** and **fake news**, utilizing **Bi-LSTM**, **LSTM**, and **Ensemble Learning Models**
 - Achieved **90+**% on all evaluation metrics on an online news dataset, and the results were **published** in Lecture Notes in **Networks and Systems**, volume 649, **Springer Nature**, pages 690-701, 2022 [[DOI](#)]
- Supervisor:** [Dr.Virendra Singh Nirban](#)

Skills

Programming Python, JavaScript, TypeScript, Java, C/C++, GoLang, SQL

Libraries React.js, Node.js (Express), Tailwind CSS, Numpy, Pandas, PyTorch, Keras, OpenCV

Tools \LaTeX , GitHub, Docker, Postman, MongoDB

Positions of Responsibility

Jan'23 – **Teaching Assistant**, *BITS PILANI*, India.

- Dec'23 Teaching Assistant for **Microprocessors** and **Interfacing**, Techniques in **Social Research** and Introduction to **Psychology** courses

Jan'22 – **Publicity Coordinator**, *Arunodoi*, *BITS PILANI*, India.

- Dec'22 Led the **photo-editing** and **video-editing** teams of the association representing **Northeast India - Arunodoi** to improve **cultural awareness** and **community engagement**

Nov'21 – **Volunteer**, *Indian Red Cross Society*, *BITS PILANI*, India.

- Jan'22 Volunteered for executing a **two-day long** Blood Donation Camp with **3000+** footfall and **800+** donations

Achievements

Nov'20 – **Dean's Merit Scholarship**, *BITS PILANI*, Pilani Campus, India.

- Present Awarded the Institute **100%** Merit Scholarship given to the top **1%** of students across all departments.

Jun'22 – **Machine Learning Summer School**, *AMAZON*, India.

- Jul'22 Selected for the Amazon ML Summer School - an Integrated ML training program with Amazon experts.