

DIBYA PRAKASH DAS

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WORK EXPERIENCE

- Bidgely** Bengaluru, Karnataka, India
Data Scientist June 2021 — June 2024
- **Similar Home Clustering 2.0**
 - Developed a **customized decision tree-based algorithm** to efficiently group users with similar behaviour while respecting business constraints.
 - Improved upon v1.0, addressing critical areas of improvement and speeding up execution.
 - Clustered **over 1 lakh users** in less than **1 minute**, reducing runtime by **95%** in comparison.
 - Fixed issues in v1.0, such as static clustering, which caused customer dissatisfaction.
 - **EV Managed Charging**
 - Developed a linear optimization solution for planning Electric Vehicle charging schedules.
 - Managed grid demand during peak hours by utilizing solar power generation during parking hours.
 - Created a novel linear objective function for **curve flattening without quadratic formulation**.
 - Developed a deployable software package that schedules charging for **500 cars in under 10 seconds**.
 - **High Bill Alert**
 - Developed an algorithm to detect and explain potential high electricity bills early, preventing surprises.
 - Worked in a tight loop to deliver a working prototype within 2 weeks with performance statistics tested on hundreds of scenarios.
 - **Next Best Interaction Engine**
 - Enhanced the recommendation engine to deliver key insights and actions from user data, improving energy efficiency and reducing costs.

EDUCATION

- Indian Institute of Technology, Kharagpur** Kharagpur, West Bengal, India
Integrated M.Sc in **Mathematics and Computing** July 2016 - July 2021
Thesis: Investigating implicit generalization properties of Neural Networks Advisor: Prof. M. Rajesh Kannan

PUBLICATIONS

- Data-Driven Windows to Accelerate Video Stream Content Extraction in Complex Event Processing** Davis, US
Piyush Yadav, Dibya Prakash Das, Edward Curry
Poster presentation in the *20th ACM/IFIP Middleware Conference* September 2019

INTERNSHIPS

- Morphle Technologies Pvt. Ltd.** Bengaluru, India
Deep Learning Intern Completion Certificate December 2019 — January 2020
- Trained a CNN model to classify HER2-stained breast cancer cells with **over 95%** accuracy.
 - Developed optimized, robust, and parallelized code to process slide images of **10⁹ pixels in under 10 minutes**.
 - Created a C++ module callable from Python for compute-heavy image processing.
 - Used ensemble learning for better predictions and developed a framework to parallelize pipeline algorithms.
- Insight Centre for Data Analytics, NUI Galway** Galway, Ireland
Visiting Student Researcher Completion Certificate May 2019 — July 2019
- Developed improved methods for processing video streams in CEP systems with heavy batch algorithms.
 - Minimized latency and **increased throughput by 3.75x** using an adaptive windowing method.
 - Created a data format to summarize video streams, achieving **5x faster query times** and **30% less storage** than existing SOTA methods.
- ParallelDots Technology** Gurugram, Haryana
Data Science Intern Completion Certificate December 2018 — January 2019
- Implemented keypoint matching augmented with vision network weights for applications in retail market.
 - Applied **RANSAC for outlier detection** and **DBSCAN for clustering to determine image-frame homography**.
 - Analyzed scale invariance in deep vision networks, including ResNet and InceptionV3.
- Linux Foundation Networking — Opendaylight** Remote
Software Development Intern Completion Certificate July 2018 — September 2018
- Interned at the Linux Foundation with Opendaylight to automate build log aggregation and visualization.
 - Developed an automated process to transfer build data from Jenkins to Elasticsearch for Kibana visualizations.
 - Created a Python library to dynamically push custom visualizations and dashboards to Kibana. **[Git]**

PROJECTS

- Midas Touchpad gesture detection utility**
- Developed a Python gesture detection program that silently tracks touchpad gestures to execute commands.
 - Implemented using **asynchronous programming** with the asyncio module for low memory and CPU usage on a single thread.
- Audan Emotion detection system for audience analysis**
- Developed a tool to detect the collective emotion of an audience as a quantitative measure of their response to the discourse.
 - Implemented frame-by-frame analysis for face emotion detection and audio signal analysis to assess intonation.

LEADERSHIP EXPERIENCE

- Kharagpur Open Source Society — Advisor** Feb 2016 — Present
- Managed a team of 20+ people and helped conduct various workshop including Async JS Programming, Golang workshop, Python workshop
 - Conducted the Open Source summit 2017 (OSS 2017) with more than 700+ registrations and KWoC 2017 with 2000+ registrations
- Ambar, IIT Kharagpur — Governor** August 2020 — July 2021
- Active member of the LGBTQIA+ gender and sexuality safe space and resource group of IIT Kharagpur
 - Conducted various events as a governor to help people become aware of these issues and make the campus a more inclusive space

AWARDS AND ACHIEVEMENTS

- **Regional finalist** in the **Build For Digital India** initiative by **Google India**
- **National finalist (in Top 6)** in the AI for education theme in **Smart India Hackathon** organized by **Government of India**
- Selected for 1000\$ grant from ACM to attend the **Middleware Conference**
- Secured **Gold medal** in **community service** by showcasing best effort in NSS camp and contributing 150+ hours of service as a part of NSS
- Secured **Gold** in **Interhall Opensoft Competition** among 20+ teams by contributing to a project that helps in digitizing medical prescriptions
- Secured **Bronze medal** in **Hack-A-Bit Hackathon** held at BIT Mesra by developing an audience emotion analysis system