

Sourav Panda

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Overview

Highly motivated Machine Learning Engineer with an MSc in Data Science and 4 years of analytical experience. Proficient in developing and deploying innovative machine learning solutions, leveraging analytical thinking and technical expertise to tackle complex challenges. Thrive in fast-paced environments, committed to continuous learning, and staying updated with the latest advancements in AI. Driven by curiosity and enthusiasm for taking on new initiatives.

Skills

- **Technical Skills:** 3D Machine Learning, Python (Scikit-learn, Pandas, NumPy, PyTorch, TensorFlow, sqlite3, OpenCV, open3D), Data Visualisation (Plotly, Seaborn, Matplotlib), Point Cloud Segmentation, 3D Reconstruction, SQL, Statistical Machine Learning, Deep Learning, Docker, AWS (SageMaker, S3, IoT), Microsoft Azure, GIT, flask, Linux.
- **Frameworks and Tools:** Microsoft Excel, Business Objects Business Intelligence, Business Warehouse, Reporting in WebI (Web Intelligence), Power BI, bexQuery and Unity.
- **Soft Skills:** Communication, Teamwork, Leadership.
- **Certifications:** Microsoft Azure-900 certified, Generative AI with Large Language Models.

Work Experience

Rebellion

Oxford, UK

Jr Machine Learning Engineer

Dec 2023 - Present

- **Game Level from LiDAR Scans**
 - Implemented Point Net architecture for point cloud segmentation to analyse and process LiDAR scans of real-world environments.
 - Developed techniques to convert segmented point clouds into 3D meshes and assets suitable for game levels using open3D and Cloud Compare.
 - Currently working on creating a height map of the scanned environment to aid in level reconstruction.
 - Developing methods to combine terrain meshes, object placements, and game assets to procedurally generate new, realistic game levels from LiDAR data.
- **AI Sentinel Artistry Denoiser System**
 - Designed and developed DirArchitect, a tool that automates the creation of agreed directory structures based on project details, ensuring consistency across all project directories and improving workflow efficiency.
 - Collaborated in the development and maintenance of database tables to support data organization and retrieval, enhancing the system's backend capabilities.
 - Assisted by supporting in data preparation efforts to improve denoising accuracy and overall system performance.

Audio Strip

London, UK (remote)

Data Scientist

Sept 2023 - Nov 2023

- **Music Source Separation using Deep Learning:**
 - Evaluated and fine-tuned state-of-the-art model for music source separation to improve signal-distortion ratio (SDR) metrics.
 - Conducted extensive benchmarking and comparative analysis across various datasets and genres. Implemented data augmentation techniques, such as adding Gaussian noise, to assess model robustness and generalization ability.
 - Achieved SDR of 6.35 on unseen data, further improving to 7.29 after fine-tuning, demonstrating strong generalization capabilities.

Yunex Traffic

Poole, UK

Data Scientist R&D

Aug 2022 - Aug 2023

- **Developed AI chatbot prototype by leveraging Large Language Models (LLMs):**
 - Prototyped chatbot using FLANT 5 from hugging face as base LLM after trying various models by prompt engineering method.
 - Used LoRA for fine-tuning and iteratively experimented with different LLM models to maximize performance.

- Presented prototype, proposed roadmap for additional capabilities, and conducted learn and grow session to educate engineering team on chatbot technology.
- **Automatic car parking using camera:**
 - Architected and deployed neural network model with base model as mobile net, using transfer learning to classify 196 car types with Flask web app on AWS.
 - Boosted model accuracy by analysing and reducing to ten classes using statistical methods for edge deployment.
 - Enhanced in/out car detection by extracting and processing data from video analysis. Calculated angle and length by designing and implementing efficient classification using KNN clustering algorithm.
- **Analysed product performance of different traffic controllers:**
 - Conducted data collection, cleaning, and regression analysis to understand factors impacting traffic delay times.
 - Developed interactive Power BI dashboards and executive summary report with actionable insights and recommendations.
- **Sensory data collection on 5G router:**
 - Upgraded legacy architecture to 5G router, doubling sensor data collection speed and designing virtual access points for improved efficiency.
 - Developed IoT testing framework reducing pre-deployment defects by 40%; created Docker image to standardize and scale data collection application.
- **Business Impact project to optimize factory training through AR simulation:**
 - Reduced new hire training time by 50% and increased factory efficiency 20% through immersive learning.
 - Partnered with cross-functional teams to identify improvement opportunities.
 - Conducted analysis to assess operations, pinpoint pain points, and proposed AR solutions to streamline training.
 - Developed immersive AR Unity simulation using ARKit to replicate factory environment.
 - Designed interactive 3D experiences replacing lengthy training manuals.

Accenture Analyst

Bangalore, India
July 2019 - Aug 2021

- Handled large datasets in media and travel domains, developing data-driven solutions in an agile environment.
- Managed data warehousing, wrote SQL queries, and migrated 1500+ BI reports in 1 week using innovative field remapping techniques.
- Built data models and visualizations to support decision-making, while maintaining data integrity across various sources.
- Enhanced client communication and negotiation skills through direct client interactions.

Vedanta Intern

Jharsuguda, India
May 2017 - July 2017

- Implemented new runtime strategy reducing power costs by £755 annually and decreasing wear and tear on machinery by analysing the data of different parameters like heat and humidity.

Education

MSc Data Science, University of Bath

Sept 2021-2023 Bath, UK

- Graduated by achieving an average of 71.3%
- **Relevant Modules:** Applied Data Science (77), Statistics (84), Machine Learning (72.5), and Software for Data Science (82), Bayesian machine learning (80)

B-Tech, Electrical and Electronics Engineering, SRM

June 2015 - 2019 Chennai, IN

- Graduated with an average of 81.77% first class with distinction.
- **Relevant Modules:** Calculus (88), Discrete Mathematics (88), Probability and Statistics (80).
- Led solar racing team to win Future Car award; spearheaded final year project applying image processing for energy conservation.
- Published research paper: "Smart Classroom Setup Using Microcontrollers and Multiple Sensors" in TEST magazine (May/June 2020), demonstrating practical application of engineering concepts.