ARINDAM BANERJEE

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Publications and Patents: https://goo.gl/KkmyPu

Summary

An accomplished multi-disciplinary AI professional with 15 years of experience in providing AI and Data-centric strategic vision to customers from across the globe, designing AI transformation roadmap, solutioning and developing AI applications.

• Programming Knowledge: Strong coding skills in Python and its libraries (NumPy, Pandas, Scikit-Learn, Matplotlib, TensorFlow, Hugging Face Transformers, LangChain, Spacy, NLTK, etc.).
• Python/Jupyter Notebook, Apache Spark / PySpark ML, RDBMS (PostgreSQL, MySQL, etc.), NoSQL, Neo4j, Computer Vision and NLP with Deep Learning, Generative AI with Large Language Models (LLM), Cloud environment - Azure ML, MLOps, Graph Machine Learning.
• **Certification:** Microsoft AI-900, Microsoft DP-100, Microsoft DP-900.
• **Filed 9 patents** till now and 6 have already been granted.

Educational Qualification

• **M.Tech** (Master in Technology) in Computer Science and Engineering from Vellore Institute of Technology, Vellore (2012- 2014) with a CGPA of 9.33/10.
• **B.E.** (Bachelor in Engineering) in Electronics and Telecommunications Engineering from Nagpur University, Nagpur (2005 – 2009) with 66.7% marks.

Work and Internship Experience

• **Ernst & Young** December 2021 – present

- Being part of the AI Centre of Excellence, addressing complex business problems with innovative state-of-the-art NLP, Generative AI, and multi-modal deep learning solutions. Enhanced existing systems, researched new techniques, and collaborated with global clients and cross-functional teams to drive development. Led several cross-geographical client engagements and assisted clients in developing Generative AI adoption frameworks, target state architecture, and best practices.
- Researched and developed solutions for structured information extraction and Knowledge Graph development in Neo4j from unstructured (English text) data using NLP methods and Generative AI. Deployed Azure AI services to extract text from documents automatically. Deployed LLM and transformer-based zero-shot learning models for augmentation of the knowledge model.
- Created LLM-based document QnA on Azure with Graph Retrieval Augmented Generation (GraphRAG) from document repositories. Augmented domain knowledge to the Knowledge Graph for context-aware information retrieval resulting in a 14% performance boost over the base model. Llama 3, Gemma 2, and GPT 3.5 models were tested for the same.
- Led a team of AI engineers in implementing an object detection and image caption generation system using multi-modal fusion and cross-modality learning techniques for a vehicle insurance company resulting in an 18% improvement in accuracy compared to previous methods.

- Designed, developed, and delivered Machine Learning solutions for customer segmentations, pricing prediction, anomaly detection, and demand prediction.

• **Ericsson** December 2014 – November 2021

- Addressed real-life business problems through Statistical Learning methods that include deep learning (CNN, RNN, LSTM) based computer vision (image classification, object detection) and text analytics techniques, end-to-end Machine Learning workflow design, data wrangling, data cleaning, feature engineering, A/B testing, development of robust Supervised and Unsupervised Machine Learning algorithms (Regression, Classification, Clustering, etc.), optimization and cloud or edge-based deployment of predictive models using Big Data.
- Developed software products for extracting user events from moderate to massive text data coming from highly distributed, third-party telecom network adaptors and deployed NLP and machine learning algorithms for predicting performance degradation.
- Developed products having objects and population detection models using Deep Neural Networks (DNN) from images captured by 5G drones and deployed on edge devices.
- Developed Machine Learning models in Python and PySpark on Big Data for telecom network anomaly and site anomaly detection that reduced the number of daily incident tickets by 25-35%.
- Developed churn prediction, customer profiling, cross-sell/upsell offer recommendation systems by customer segmentation in Python using supervised and unsupervised machine learning algorithms.
- Involved in research and POC development. **Filed nine patents from Ericsson as an individual inventor**.
- Mentored and trained team members on Data Science related technologies. Mentor of Ericsson AI Academy.

• **TATA Consultancy Services (TCS), India** March 2010 – December 2014
(Including 2 years of sabbatical for post-graduation)

- Contributed to developing Analytical Model from text logs to provide daily/weekly/monthly insights into viewers' population, viewers' interaction, video advertising, and the end-to-end development of stable, scalable features that helped the client to increase the targeted traffic by 23% at the initial level.
- Performed analytics, downtime prediction, waste prediction, performance tuning, and scheduling of stored procedures and functions in MS SQL production server for high-velocity manufacturing data that eliminated hour-long slowness experienced during pick hours.

• **Alcatel Lucent India Ltd. (Nokia)** Chennai, India
Intern October 2013 – June 2014

- Performed data analysis on video broadcasting data to extract subscribers' VoD (Video on Demand) and SVoD (Subscription Video on Demand) buying patterns.

• **Priyadarshini College of Engineering** Nagpur
Adhoc Lecturer June 2009 – October 2009

Open-Source Development

• **Google Summer of Code:** *May 2014 –August 2014*

PCB Autoplacer - Developed an open-source, standalone PCB Autoplacer (with a novel placement algorithm) in Java, having file format compatibility with KiCAD PCB Designer.

Achievements

• **Innovation Excellence Award** and **Top Innovator Award** winner in Ericsson for developing patent-pending solutions as an independent inventor.
• **Service Excellence Award** winner in Ericsson for consecutive two years for outstanding innovation in service delivery.
• Received **Merit scholarships** twice from VIT University for Best Academic Performance in the academic year of 2012-2013 and 2013-2014; university rank holder (5th rank).
• Won **"Star of the month"** and **"Best Team"** awards in TCS; TCS Gems holder.
• Received **Merit Certificate** under **NATIONAL SCHOLARSHIP SCHEME** from THE GOVT. OF WEST BENGAL for securing a position in the list of meritorious candidates 10th Std. SSC from West Bengal in 2003.

I, Arindam Banerjee, am hereby confirming that all the information given above is true according to my knowledge and belief.

Arindam Banerjee