Debarun Ghosh

Site Reliability Engineer | Generative AI Developer | Innovator in Research & Technology

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I am a graduate in Electronics and Communications from REVA University and have completed a Postgraduate Program vocational course in Applied Generative AI Specialization from Purdue. With a solid foundation in AI and machine learning, honed through hands-on experience in various projects and internships, I am eager to apply my skills to AI/ML-based opportunities. My background includes developing AI-powered solutions that enhance operational efficiency and decision-making. I am keen on pursuing a career in technical roles that allow me to learn and grow my expertise in AI/ML solutions.

Experience:

Professional:

Organization : **ANZ Pvt. Ltd., Bengaluru**
Position : Site Reliability Engineer (SRE)
Duration : May 2024 – Present
Project : AI-Driven Operational Enhancements and Data Management
Description : Spearheading initiatives to optimize data workflows and implement machine learning models, contributing to operational efficiency and informed decision-making within the Banking Sector.
Tech Stack : Python, PostgreSQL, Terraform, Code Fresh, LLMOps, NLP, Full Stack Development, Docker

Role:

- AI-Powered Chat Interface: Led development of a ChatGPT alternative for ANZ, enhancing customer interaction with a scalable, secure, and compliant AI-driven platform.
- Data Management: Improved PostgreSQL retrieval speeds by 30% and boosted data availability by 40% through optimized ETL pipelines.
- EDA & Machine Learning: Increased data-driven decision-making by 20% and improved model prediction accuracy by 25%.
- Full Stack Development: Reduced development time by 15% using Python and tools like Jupyter notebook, Visual Studio Code, PostgreSQL, Terraform, Docker Deployment, JIRA, and Code Fresh.

Academic – Internship:

Organization : **DOM4U Pvt. Ltd., Bengaluru**
Position : AI/ML Integration Engineer
Duration : December 2023 – April 2024
Project : Generative AI and Applied Machine Learning utility
Description : Enhanced legacy industrial applications through AI and ML integration, automating and improving efficiency via deep learning and reverse engineering.
Tech Stack : Python, Machine Learning, CUDA, TensorFlow, OpenCV, YOLO, Keras, JIRA (Agile), Java, JS, MySQL, Deep Learning Framework, Business Static Analysis and Technical Documentation.

Role:

- Implemented AI models utilizing OpenCV, YOLO, and CUDA for real-time processing.
- Optimized predictive modelling techniques that reduced data analysis time by 40% and improved accuracy by 15%.
- Understanding Software Life Cycle and gained understanding as QA tester during Production.
- Addressing new ideology for new Gen AI and ML and how this can affect certain products overall usability.

Organization : **Mphasis Ltd., Bengaluru**
Position : Software Engineer Intern
Duration : May 2023 – July 2023
Project : Transformation of COBOL (Mainframe) to Active Programming Language
Description : Developed an automation tool to convert COBOL code to high-level programming languages using Machine Learning pre-trained models, enhancing mainframe application efficiency and modernization.
Platform : Anaconda (Jupyter), Machine Learning, TensorFlow, Keras, BERT, LLM, NLP, Transformers
Role:

- Utilized pretrained AI models – BERT, Transformers, boosting mainframe efficiency.
- Process automation benchmarks. Solved technical problems with innovative optimization methods.
- Honed AI and automation for enterprise applications.
- Directed project cycles, meeting strategic goals efficiently.

Volunteer:

Secretary IEEE Student Branch (REVA University)
Duration: March 2023 – October 2023

- Orchestrating technical events, elevating the professional growth of over 100 student members through tailored workshops and industry interface sessions.
- Executing data-driven approaches, yielding a 20% surge in branch membership by using IEEE vTools.
- Strengthening internal communications and project coordination, optimizing event planning and operational efficiency.

Education:

- **Purdue University** : **Postgraduate Program** in Applied Generative AI Specialization, August 2024.
- **REVA University** : **B. Tech** in Electronics, and Communications Engineering, June 2024 (Completed).

Projects:

- Nestle HR AI Assistant (Repository: http://bit.ly/4fR2pZ3) – **Purdue University**
  - Enhanced HR Efficiency: AI-driven assistant using LLaMA 3.1 8B for accurate, context-aware HR policy responses.
  - User-Friendly Interface: Gradio interface enables easy, natural language access to HR policy information.
- Monitoring Vision AI (Repository: https://bit.ly/3MgAG6m) – **REVA University**
  - It uses a TensorFlow/Keras model to monitor machine status, with a Streamlit interface for real-time predictions.
  - The system includes motion detection, status logging, and email alerts, enhancing monitoring capabilities.
  - The project captures video, preprocesses frames, and determines machine status for efficient management.
- 5G Network Energy and Channel Optimization (Repository: https://bit.ly/3FTE5Fd) – **IEEE NKCON 2023**
  - Engineered a Python-based optimization framework – Genetic Algorithms (GA) and Particle Swarm Optimization (PSO) to reduce energy consumption in 5G networks.
  - Conducted iterative solution, fine-tuning parameters to minimize operational energy costs while optimizing channel allocation. Achieved optimal network results through rigorous algorithmic strategies.
- Neurological Disorder Classification & PoTS Diagnosis (Repository: http://bit.ly/3MAhSPZ) – **Self Explored**
  - Engineered a Python-based ML pipeline using logistic regression and CNN for accuracy.
  - Enhanced predictive models, achieving high accuracy validated through ROC analysis. Visualized results with confusion matrices.

Publication:

- Orchestrated the integration of Genetic Algorithms & particle swarm optimization in 5G networks, boosting energy efficiency by 30% and enhancing overall network performance (IEEE NKCON '23, January 2024 - https://bit.ly/3UAFrx5)
- Researched and implemented AI-driven strategies to reduce energy consumption in 5G networks, resulting in a 25% decrease in overall energy usage (IEEE ICONAT '23, April 2023 - https://bit.ly/47t1FUP)

Awards:

- First Runner-up in the National Level Project Exhibition at The National Institute of Engineering Mysuru, 2022
- National Creative Aptitude Exam 2022 – Holding All India Rank: 79
- Winner in Education Week event 'Write Way,' - IEEE Education Society Ad Hoc Young Professionals Committee, 2023

Certifications:

- AGS Advanced Generative AI: Models and Architecture – Purdue University – Simplilearn (Certification Id: 6961374)
- AGS Essentials of Generative AI, Prompt Engineering & ChatGPT – Purdue University – Simplilearn (Certification Id: 6835121)
- PwC Switzerland - Power BI Job Simulation – PwC – Forage (Certification Id: QsDKnZa6aJJmmBYKq)
- Virtual Experience Participate – Software Engineer – JPMC (Certification ID: brNC3Nvi6yTpA5Yh5)
- Virtual Experience Participate – Quantitative Research – JPMC (Certification ID: cntgfdtikim4jojJH)
- Python for Data Science, AI & Development – IBM (Certification ID: BN8J9CMANXQN)
- Virtual Experience Participate – Agile (Scrum) – JPMC (Certification ID: hAzifmFJwgwajgDPk)
- Microsoft Certified Systems Administrator: Machine Learning – Verzeo

Skills:

- GenAI – RAG, Prompt Engineering, GAN, VAEs,
- Deep Learning: PyTorch, Tensor flow, OpenCV, NNs, Keras, LLMOps, NLP
- Python, Machine Learning: Roc, Confusion Matrix, Analysis, Regression, Lambda
- MATLAB, Data Analytics, Visualization
- C/C++, Linux
- Oracle SQL/MySQL/PostgreSQL/SQLite, Big Data Analysis, Vector Database
- Microsoft Power Bi, Jira, Agile Methodology, LangChain for Workflow Design, Ansible
- Basic Java/JS, HTML and CSS

Languages – English (Fluent), Hindi, Bengali, Kannada (Beginner), French (Beginner)