Anubrata Bhowmick

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Summary

Visionary technology leader with extensive experience in AI, Generative AI, Retrieval-Augmented Generation (RAG), software development and cloud architecture, driving large-scale digital transformations in the healthcare and financial industries. Currently leading AI and Data Analytics at Olympus EMEA, delivering state-of-the-art AI-driven solutions with Deep Learning, Graph Neural Networks, and Generative AI. Proven expertise in developing scalable Azure-based architectures, MLOps platforms, and enterprise-grade cloud solutions, ensuring operational efficiency and cost optimization. Known for managing cross-functional global teams, defining strategic technology roadmaps, and spearheading innovation that aligns business objectives with cutting-edge advancements. Recognized for strong software engineering, solution architecture, and executive leadership skills, positioning for the next step as CTO.

Experience

Genesys Lab **Aug 2024 – Present**

Founder and Chief Technical Officer *Wieringerwerf, Netherlands*

- Founded Genesys Lab as an AI-based consultancy firm, helping businesses leverage AI for strategic transformation.
- Led AI Strategy & Governance projects, assisting enterprises in developing AI frameworks for compliance, ethics, and operational efficiency.
- Developed a GenAI-driven document retrieval system for a financial services client, enhancing customer support efficiency by 40%.
- Designed a custom AI-powered medical diagnostic assistant for a healthcare company, reducing misdiagnosis rates and improving clinical decision-making.
- Delivered Free Executive AI Workshops to C-level leaders, helping them understand AI opportunities and create actionable roadmaps.
- Built Enterprise Data Foundations, implementing scalable data architectures that enable AI-driven insights.
- Created and deployed Agentic AI Systems, automating complex workflows with autonomous AI agents.
- Completed 10 client engagements, driving real-world AI adoption across various industries.

Olympus EMEA **Apr 2024 – Present**

Group Leader: Data Analytics and AI *Wieringerwerf, Netherlands*

- Leading cross-functional teams of engineers, data scientists, and solution architects to integrate AI-driven solutions into Olympus' healthcare technology portfolio.
- Serving as the principal architect for AI and cloud-based solutions, designing and implementing scalable, cost-effective platforms on Azure, leveraging Kubernetes, Docker, and microservices architecture.
- Driving the development of an Azure-based MLOps platform, enhancing data processing efficiency by 30%, streamlining AI model deployment, and ensuring compliance with medical regulations.
- Spearheading the integration of Generative AI and RAG-based models into medical imaging applications, optimizing real-time diagnostics and decision-making processes.
- Developing cutting-edge RAG frameworks that enable real-time retrieval and augmentation of clinical knowledge, enhancing AI-powered decision support systems.
- Partnering with executive leadership to define AI strategy, ensuring alignment with long-term business objectives and regulatory frameworks.

Quest Medical Imaging(Olympus EMEA) **Mar 2023 – Mar 2024**

Research Scientist *Wieringerwerf, Netherlands*

- Designed and developed AI-powered clinical decision support systems using Retrieval-Augmented Generation (RAG) models, enhancing intraoperative tissue classification by 20%.
- Led the architecture and deployment of cloud-based AI pipelines, integrating Azure ML, Kubernetes, and data lakes for scalable healthcare analytics.
- Pioneered deep learning-based hyperspectral image analysis, improving surgical precision and reducing false positive rates by 10%.
- Developed synthetic data generation frameworks using Generative Adversarial Networks (GANs), significantly increasing model training efficiency and accuracy in real-world surgical environments.
- Led collaborations with cross-functional teams, including clinicians and regulatory experts, ensuring AI solutions meet stringent medical standards.

Philips **Sept 2021 – Feb 2023**

Data Scientist *Eindhoven, Netherlands*

- Architected and led the development of a cloud-native hospital analytics tool, leveraging Generative AI for scenario-based simulations, optimizing patient flow and reducing operational costs by 20%.
- Designed and deployed edge AI solutions, optimizing deep learning inference for real-time infant monitoring, reducing latency by 30%.
- Developed RAG-driven AI systems to dynamically retrieve and augment medical knowledge, improving real-time hospital decision support capabilities.
- Pioneered the use of synthetic data generation techniques, improving detection accuracy by 25% in real-world applications.
- Defined best practices for secure, scalable AI system development, ensuring compliance with healthcare regulations.

Tata Consultancy Services **Aug 2016 – Feb 2019**

Systems Engineer *Kolkata, India*

- Led the architecture and development of AI-driven fraud detection and risk assessment systems for banking platforms, boosting transaction security and fraud prevention.
- Spearheaded the development of a cloud-based payment platform, ensuring scalability, high availability, and secure transaction processing.
- Designed and implemented a behavioral classification algorithm, preventing fraudulent activities and improving customer retention to 90%.
- Collaborated with cross-functional engineering teams to deploy machine learning-powered financial solutions, enhancing market competitiveness.

Education

University of Twente **Sep. 2019 – July 2021**

Master of Science in Computer Science *Enschede, Netherlands*

Bengal Institute of Technology **Aug. 2012 – July 2016**

Bachelor of Technology in Information Technology *Kolkata, India*

Publications and Patents

Patents **2022 - Present**

- **7 Patents:** 2 patents approved at Philips, 3 patents approved at Olympus EMEA, 2 patents pending.

Baby Positioning using Quantization Aware Training for Edge Devices **September, 2022**

- Developed QAT methods optimizing AI inference for resource-constrained medical devices.

Markers of Brain Resilience **January 2021**

- Advanced machine learning models for functional brain connectivity analysis.
- Click Here: Master Thesis, UTwente

Augmenting context-aware citationrecommendations with citation and co-authorship history **July 2020**

- Proposed novel AI-driven academic citation models.
- Click Here: 18th International Conference on Scientometrics and Informetrics, ISSI 2021

Technical Skills

Software and Cloud Architecture

- Enterprise software development with Python, Go, SQL, Next.js.
- Architecting scalable solutions on Azure (Azure ML, Kubernetes, Docker, Azure DevOps).
- Building and deploying AI solutions using FastAPI, MLflow, Airflow, DVC, and Hydra.
- Implementing MLOps, CI / CD pipelines, and native AI on the cloud.
- Design of high-performance, microservice-based systems for medical and financial applications.

AI & Machine Learning

- Deep Learning, Generative AI, Graph Neural Networks, Transformers, Large Language Models.
- Retrieval-Augmented Generation (RAG), Computer Vision, Synthetic Data Generation.
- Real-time AI deployment for edge and cloud environments.

Leadership & Strategic Vision

- Leading cross-functional engineering and research teams across global locations.
- Driving AI and cloud transformation strategies for enterprise-scale businesses.
- Managing the end-to-end AI product lifecycle, from the creation of the roadmap to execution.
- Aligning technical innovation with business growth and regulatory compliance.