


DWAI BANERJEE

Software Engineer

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 Bengaluru



Dwaipayan Banerjee is a technology and engineering leader with over 23 years of experience in building and leading high-performing, culturally diverse teams to deliver transformative innovations globally. He is skilled in multiple programming languages, scalable service architectures, distributed data platforms, compound AI Systems and zero trust network models. He is versed in machine learning/AI and is also proficient in HPC systems and latest GPU topologies for optimizing distributed, mixed and multi-precision workloads across various cloud platforms. He has been instrumental in technology product building and initiatives across diverse sectors including cloud hyperscalers, healthcare, BFSI, retail, bio-pharma, upstream oil and gas, and manufacturing. He has lived in The Netherlands and worked in mainland Europe for over a decade with experience in the UK, USA, Africa, Southeast Asia, the Indian subcontinent, and the Caribbean. Dwai is presently based in Bangalore for the last six years.

EXPERIENCE

Independent

Independent | Jan. 2024 - Present  India

A leading firm that specializes in the organization and administration of electronic reverse auctions (ERA) wanted open elastic pricing models as the inception for an open platform engine on top of their existing procurement systems. Working as the defacto platform owner, architected and designed the platform using medallion Lakehouse data architecture on the cloud.

- The distributed engine is designed to be elastic, leveraging GCP's BigQuery/data Catalog/dbt, Dataflow (Beam) for pipelines, Airflow and PubSub for data ingestion and transformations using both Streaming for CDC as well as Batch processing, MLFlow for model training and tracking, and GKE(Enterprise GKE with dataplane 2.0 and Gateway API). The trainers use Raytune for hyperparameter tuning and dask (for GKE) for parallel computing with the training steps following rigorous feature engineering with ERA domain Specialists and model selection using Darts primarily with N-Beats variations presently and BentoML being used for inference.
- The services (dbt, Airflow, BentoML, MLFlow, trainers, validators on GKE) are fully instrumented using Otel (Opentelemetry).Prometheus and grafana is the Observability stack along with EFK for fleets following Gitops using ArgoCD / Container registry for helm, operators, CRDs and job manifests and Cilium Network policies.
- The Engine is expanding in areas of Evaluation Criteria and Auction Dynamics with on-boarding and training of new models. Bigquery is being heavily used for Analytics. Assisted in ramping up the ML/Analytics team to include Data Scientist(s)/MIOps Engineers. Trained personnel on platform usage/support/laC and establishing governance/FinOps policies/change procedures for the same.


Senior Solutions Architect

AWS | April 2023 - Jan. 2024  India

As a Senior Solutions Architect at AWS India, Dwai contributed to AWS Generative AI initiatives, focusing on LLMs(Llama/Claude/Titan), AWS Sagemaker, AWS Data Stacks (Glue/AWS Databricks/Redshift) primarily in the Healthcare space and HPC.

- Launched private previews of Amazon Bedrock for customers. Contributed to langchain for the same. He also established RAG stack deployments using vector databases like FAAIS, ChromaDB, and OpenSearch Serverless for LLM-based applications using SageMaker along with other tools like langchain. Key Achievements include rolling out a ASR based Health Agent for a leading Healthcare customer and deployed a project for initial prototyping of pilot-less taxis using Slurm to distribute Ansys Fluent CFD simulations.
- Defined and developed stacks with workshops encompassing machine learning, health, security compliance, multi-region disaster recovery, EKS, LakeHouse, DevOps/CI/CD, monitoring, alerting, federation and auditing. He conducted workshops on Amazon HealthLake, a HIPAA-eligible service offering FHIR APIs.


Senior Principal Software Engineer

Citrix Systems | Oct. 2020 - Mar. 2023  Bengaluru, India

Dwai served as Senior Principal Software Engineer for Citrix Virtual Apps and Desktops (CVAD), driving new feature development for CVAD and DaaS (Desktop as a Service) across Azure, AWS, and GCP. CVAD and DaaS generates approximately \$2 billion in annual revenue for Citrix.

- Design, Development(Golang Microservices), reviews via SAFe with FedRAMP compliance with defining stacks for health, vault usage, metrics, auto-scalability, monitoring, and federation across SD-WAN rings. Designed and rolled out Terraform Enterprise for managing granular cloud deployments, especially Kubernetes fleets. He established intra and cross-cloud policies using Open Policy Agent (OPA) and Gatekeeper, integrating with HashiCorp tools and Sentinel policies.
- Contributed to Citrix Workspace's GPU Direct and FP64 rendering. Extensively Mentored engineering teams.


Principal Architect

Philips Healthcare | Dec. 2018 - May 2020  India

Dwai served as Principal Architect for Health Suite on-Premise (HSoP) at Philips Healthcare R&D, where he enabled next-generation healthcare systems. He led, designed, and developed across multi-hypervisor environments, including StratoScale and vSphere, facilitating large-scale deployments for healthcare applications.

- He designed and implemented scalable core services, such as HL7 Broker, FHIR Server and OIDC Providers, ensuring compliance with healthcare standards. Dwai defined and benchmarked multi-GPU fabrics for R&D in graphical and parallel compute-intensive applications, specifically targeting computed tomography, health suite insights and radiation oncology.
- Dwai implemented automated workflows for medical applications via GitOps, image hardening, and scanning using CI/CD, overseeing the end-to-end design for the hybrid cloud platform of HSoP. He managed multi-vendor hardware and licensing for HSoP He also initiated projects to explore CLARA Medical Image Containers and NVIDIA DIGITS frameworks on commodity hardware, establishing standard tool stacks at Philips R&D to accelerate microservices incubation and rollouts in the healthcare domain. Extensively worked on the security aspects of the platform and mentored teams.

Senior Solution Director


HCL Tech. | May 2017 - Nov. 2018  The Netherlands & EU

Senior Solution Director working cross verticals and responsible for customer solutions. Lead, build and work with engineering/project implementation teams targeting automated reusable scalable stacks.

- Public and Private Cloud enabling, microservices on immutable infrastructures, container standards/implementations for European conglomerates. Automatic deployment of Bare or managed Kubernetes or Red hat OpenShift Container Platform for various topologies and hypervisors and design of microservices. Extensively worked for Digital Banks, Financial services and Insurance for greenfield deployments.

- Dwai also enabled solutions for HPC/GPU immutable compute fabrics for customers across the world working on latest scientific computing and simulations including HPC with toolkits like GATK/torque/slurm for clinical trial companies and the automotive industry especially on the public cloud.


Cloud Solution Architect

Microsoft | Jan. 2016 - Apr. 2017  The Netherlands, USA

Specialized in HPC and GPU Computes and data stacks for Energy upstream and manufacturing simulations, contributed heavily to IaaS topology automation for Azure and NVIDIA. Worked on early Docker Data Center Automated topologies and contributed for Azure opensource.

- Created and maintained Azure github repositories for K80 (GK210 Duo) GPU Compute Auto Linux clusters for CUDA non graphical apps and HPC Big computes RDMA/IB Auto linux clusters for Intel MPI on Azure. These are immutable, intelligent compute grids with Nvidia Docker options and configurable soft RAID with multi options for GPU Direct, iWARP, ROCE v2 for the best fabric combinations as part of Azure.
- Automated Benchmarking and scalability on the compute GRIDS for various business for their simulations especially for automotive and Ship Building HPC R&D. Supported end users in the usage of the open sourced Compute Grids and Visualizations, especially Geologists, Petroleum engineers, Simulation engineers and HPC R&D. Evangelized on stacks at partner and customer meet ups via lightning talks and demos. Created and maintained M60 Graphical 3D Apps over PCoIP for Azure.

Principal, Solution Architecture

Exact Software | Aug. 2015 - Nov. 2015  The Netherlands

R&D on future enabling Exact product portfolio.

- Leading the Research and prototyping of a new fast, cloud enabled responsive avatar of the stable and most successful of Exact’s back office ERP System. Architect and program writer for invoking and Instrumenting Legacy Code base via decoupled Web Interceptors and a hyper Scalable COM Server. Creating and implementing Architecture Deployment Blue prints for the range of Exact Product Lines on public, private and Hybrid Cloud systems.Product Management for reducing market churn in older product lines.
- Componentization of older siloed product stacks in a distributed topology and composable micro services. Evangelized future Exact Product lines in meet ups and focus groups. Rolled out internal hackathons for rapid proto-typing. Advise Exact Board on technology trends and inputs on product management.

Senior Consultant

Enable-U | Jan. 2014 - Jul. 2015  The Netherlands, Africa

At Enable-U, Dwai contributed to improving IT architecture across Benelux, South Africa, the Middle East, and European institutions. The company delivered automated API management, SOA governance, perimeter security, and business transformation solutions.

- Created, implemented and productized the Enable-U Middleware AutoDiscovery and Governance as a High Traction flagship integration product with a small team. Extended to IBM Integration Bus and Oracle SOA Suite.
- Architected the HUDUMA eGovernance model for the Ministry of Devolution and Planning, using a Federated Hub-and-Spoke system with Oracle, TIBCO, and AWS. Implemented SOA governance and security for Eurocontrol (EU Air Traffic Management) and led the Enable-U 2 Orchestrate stack for the Dutch government, ensuring seamless message transformations, perimeter security, and service/API governance. Led solutions in new regions, especially Africa, and mentored teams while evangelizing API gateways at Dutch meetups.

Domain Solution Architect

Canon Europa | Oct. 2011 - Jan. 2013  The Netherlands

Dwai served as the Pan-European Integration Solution and IT Architect at Canon Europa N.V., leading the Canon Unity Programme, a major IT consolidation across Europe, the Middle East, and Africa, covering sales offices, stores, warehouses, and franchise outlets.

- Managed over 1.5 million complex real-time transactions per month, with nearly double the volume in ETL loads, supporting product management, supply planning, budgeting, BI, and master data management. Architected and stabilized the integration and data landscape, enabling business growth for Canon in EMEA. Led the Enterprise B2B Gateway initiatives and built the Centre of Excellence for Integration and Data.
- Spearheaded new tech solutions including Registry and Repository, complex event processing, and common service catalogs. Rolled out Canon’s ETL and data phase using the Informatica Suite, ensuring continuous integration and development. Directed collaborations with vendors (Deloitte, CapGemini, Logica, IBM, Oracle, Informatica) and managed Canon’s HP infrastructure, data centers, and cloud services across Europe.

Technical Architect

TMNS | Apr. 2009 - Oct. 2011  The Netherlands, Switzerland

At TMNS, Dwai led product-agnostic IT initiatives in Enterprise Architecture, Cloud Infrastructure, and Open Systems across Oracle, WebSphere, Apama, TIBCO, and Mule.

- Architected and developed O2mc, a complex event processing (CEP) product for a EU startup. Leveraged Progress Apama, Sonic ESB, AWS, and Nagios for a highly scalable cloud platform enabling online ad optimization and automated AdWord bidding using machine learning. Provided a comprehensive architectural roadmap for the International Criminal Court (ICC). Advised on middleware and SOA technology for G-Star RAW. For Swisscom, developed critical apps using TIBCO BW and WebSphere, improving transaction throughput by 35% through thread tuning and optimized code.
- Managed TMNS’s VMware server farm and initiated TMNS’s AWS-based IaaS delivery platform. Built a self-service hybrid infrastructure for on-prem hypervisors and AWS, evangelizing early cloud adoption and implementing middleware frameworks for telecoms using a Canonical Data Model.


Technical Architect

HCL Tech. | Jan. 2008 - Dec. 2009  India, UK, Malaysia

Dwai was one of the first technical architects at HCL Technologies, contributing to significant business growth in products and solutions. He managed the HCL-Cisco AON Labs and architected solutions for various clients across multiple geographies.

- As part of the Platform for Growth (PfG) program sponsored by the CIO of Halifax Bank of Scotland in Bristol(UK), Implemented a SOA Governance model overseeing service portfolios, lifecycle management, funding processes, and performance monitoring.
- Led the Cisco AON labs, enhancing products and SaaS gateways while mentoring a team of developers. Managed a self-service infrastructure for Cisco AON, building features in service virtualization, security, routing, and transformation using open Java APIs. Successfully executed the first Cisco AON initiative for Orange Israel and implemented the WebEx Connect gateway post-merger. As lead Solution Architect for the SOA Centre of Excellence, provided solutions and assessments for clients including Disney, Rexel Australia and Cadbury, among others. Created scalable infrastructures for lab maintenance and WebSphere/Oracle SOA Suite topologies across hypervisors.

Senior Member Technical Staff

Oracle | Jan. 2006 - Dec. 2007  Bengaluru, India

Dwai was part of the Cross Product integration team for the 11g release and 10.1.3.1 team for Oracle SOA Suite development. Key highlights include:

- Oracle Fusion Middleware 11g: Contributed to JBI and SCA-compliant enterprise middleware, enabling SCA components on a common fabric engine. BPEL & Workflow Engines: Integrated BPEL Process Manager, mediators, rules, and human workflow engines, enhancing end-to-end workflows.
- Defined service engine communication protocols and enhanced BPEL, mediator, and rules, incorporating SCA, JBI, and WS-Eventing standards. Implemented UDDI integration with BPEL PM and HA topology maintenance. Developed features for the 10.1.3 Oracle Enterprise Service Bus, using open APIs and contributing to OASIS standards. Managed integration with WebSphere Network Deployment and MQ. Built clustered/non-clustered environments (Linux RHEL 3/4) for SOA Suite components, supporting SWAT teams in replicating customer topologies.


Engineer

IBM | Jan. 2004 - Dec. 2005  India, Switzerland, UK, Barbados

Dwai worked at IBM as an Engineer, Developer, and Consultant on WebSphere products, AIX infrastructure, security solutions, and SOA implementations. He contributed to some of the world’s largest SOA and B2B projects across three continents. Key highlights include:

- Department of Work & Pensions (DWP): Worked on the Web Services gateway for the Corporate Integration Backbone (CIB).FirstCaribbean International Bank (FCIB): Implemented the WebSphere Message Broker infrastructure for the hybrid banking model, integrating AS400 core banking and IVR systems. Implemented an MQ-based disaster recovery solution and automated queue administration and monitoring. Nestlé Globe EDI Gateway: Contributed to the initial inception stage, focusing on WebSphere Data Interchange (WDI), Cyclone Interchange, and Transaction Director (TxD).
- Defined the Security Architectural Principles using MESA (Method of Architecting Security Solutions), identifying six sets of common services. Utilized Knoppix, Nessus, and PHLAK (Professional Hacker’s Linux Assault Kit) in this role.

C++/Web developer

Various | 2001 - Oct. 2003  India

Worked mostly on messaging systems, web development and C++ routines. Also developed an end to end Distributed Logistics systems- eSCM (e-Supply Chain Management) for Japanese and British customers. This aimed at integrating Mitsui & Company (UK) plc’s Supply chain model along with the process partners.

- Build and maintain large linux based topologies, Extensive use of WebLogic and Sun OS, besides standard linux flavours. Develop specific User Exits in C++ for WebSphere MQ. Implementation of various OOPs design patterns.
- Designed, implemented with a small team using EJBs and went live with eSCM with a plethora of features. eSCM is still used for SMBs especially in the United Kingdom. Work with initial VT-x. Organize Linux Fests.



SKILLS

Technical

JavaScript/Angular/React/Vue

Python/Ruby/PHP

Node.js/ASP.NET

PostgreSQL/MySQL

Object-oriented design

Design and implement database structures

Lead and deliver complex software systems

Professional

Effective communication

Team player

Strong problem solver

Good time management

CERTIFICATIONS

The Open Group Certified: TOGAF® 9 Certified

Credential ID 32021

2010

EDUCATION

Bachelor of Engineering, National Institute of Technology, Durgapur, India

1997 - 2001
