Sachin P. Bulchandani

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SUMMARY

Cloud and DevOps Engineer with expertise in AWS automation, Kubernetes, and Terraform. Skilled in designing secure, scalable systems and streamlining deployments with CI/CD pipelines. Additional experience in data engineering and ML workflows, bridging Cloud and AI for business-ready solutions.

TECHNICAL SKILLS

- **Cloud Platforms:** AWS (EKS, EC2, S3, CloudFront, ALB, WAF, Route 53, Cognito, DynamoDB, RDS/Aurora, ElastiCache/Redis, OpenSearch, ECR, Lambda, Glue, Athena, SageMaker, CloudWatch, IAM, Secrets Manager, ACM, VPC, SNS, SQS, EventBridge), Azure (VMs, Functions, Blob Storage, Databricks), GCP (BigQuery, AI Platform, Compute Engine), IBM Cloud

- **DevOps & Automation:** CI/CD (GitHub Actions, AWS CodePipeline, CodeBuild, CodeDeploy), Docker, Kubernetes (EKS), Git, Apache Airflow, Linux(Ubuntu, Red Hat), Windows Server

- **Programming & Scripting:** Python, Bash, PowerShell, SQL, JavaScript, TypeScript, Java, C/C++

- **Infrastructure as Code:** AWS CloudFormation, Terraform, AWS CDK (Python)

- **Data Technologies:** ETL, Amazon Redshift, Apache Spark, SQL & NoSQL Databases (DynamoDB, Aurora PostgreSQL, Redis)

EXPERIENCE

Large Language Model (LLM) Trainer & Evaluator   Toronto, ON
DataAnnotation — Freelance, Remote   *Nov 2023 – Present*

- Authored and curated a dataset of over 5,000 technical prompts focused on Python and JavaScript to systematically benchmark model performance in code generation, debugging, and refactoring.

- Enhanced AI model safety and correctness by performing adversarial testing, identifying and documenting critical security vulnerabilities and subtle logic errors in generated code.

- Developed comprehensive evaluation rubrics and provided structured feedback on model outputs, contributing to a measurable improvement in the model's adherence to complex instructions.

- Resolved high complexity coding issues by deconstructing failing GitHub pull requests and engineering validated, AI assisted solutions that passed all unit tests.

Research Assistant   NRW, Germany
Fraunhofer IOSB-INA — Part-time, Remote   *Apr 2021 – Oct 2022*

- Designed and implemented a novel anomaly detection system using an LSTM-VAE and ensemble models, achieving a 10% reduction in false positives for cyber-attack classification.

- Implemented synthetic data generation techniques (SMOTE) to address severe class imbalance in attack data, improving the model's ability to detect rare threat events.

- Systematically mapped the model's detection capabilities against the MITRE ATT&CK framework, identifying and closing defensive gaps in 15% of tested techniques.

- Processed continuous sensor data with Python, NumPy, and Pandas to extract attack patterns.

- Co-authored and presented detailed research findings on advancements in ICS cybersecurity to senior engineers and academic peers.

CLOUD & DEVOPS PROJECTS

Scalable E-Commerce Platform on AWS   *Personal Graduation Project, Project Link*

- Architected and deployed a multi-AZ, fault-tolerant AWS infrastructure, achieving near-zero downtime for critical workloads.

- Designed and containerized a secure microservices backend using Docker, orchestrating services like Product, Order, and User/Auth on Amazon EKS for scalability.

- Strengthened security posture with AWS WAF, IAM role-based access, and network segmentation via VPCs and Security Groups.
- Engineered an event-driven notification system for real-time order processing and user communication using AWS SNS and SQS.
- Leveraged DynamoDB, Aurora PostgreSQL, and ElastiCache for Redis to optimize data storage and query performance.
- Automated deployments through a CI/CD pipeline (GitHub Actions + AWS CodePipeline), cutting release time from hours to minutes.

Movielytics: Movie Data Warehouse & ETL Pipeline   *Personal Project,* [*Project Link*](#)
- Designed and implemented an AWS-based ETL pipeline processing 45K+ records with PySpark and loading into a Redshift data warehouse.
- Orchestrated complex ETL workflows using Apache Airflow, with all components containerized in Docker for portability.
- Embedded custom data quality checks within Airflow DAGs to ensure high-integrity datasets.
- Modeled the warehouse using a star schema in Amazon Redshift, reducing query execution times by 40%.
- Enabled analytics to uncover trends in user engagement and revenue drivers for data-driven decision-making.

Breast Cancer Detection (Computer Vision)   *Personal Project,* [*Project Link*](#)
- Built and deployed a computer vision application for medical image analysis, hosted as a public service on Google Cloud Run.
- Fine-tuned a RESNET50V2 model achieving 93% classification accuracy on the BreakHis_v1 dataset for binary breast cancer detection.
- Established a reproducible ML workflow using DVC for data versioning and CI/CD for automated deployments.
- Developed an ETL pipeline to clean and partition histopathological images, ensuring balanced and unbiased training.

MACHINE LEARNING & RESEARCH PROJECTS

Intelligent Job Scheduling with GNN-RL   *Master's Thesis, Fraunhofer IOSB-INA,* [*Project Link*](#)
- Designed a GNN-based RL agent for Job-Shop Scheduling with a custom Python simulation on AWS EC2.
- Achieved an 18% improvement in average job completion time compared to traditional heuristics.

RL for FMS Routing   *Research Project, Fraunhofer IOSB-INA,* [*Project Link*](#)
- Implemented a PPO-based RL algorithm in PyTorch to optimize material routing in a Petri-Net simulated FMS.
- Reduced routing collisions by 30% while improving throughput in dynamic production scenarios.

EDUCATION

PostGraduate Certificate in Cloud Computing Technologies — GPA: 3.8	Toronto, ON
George Brown College	*Apr 2025*
MSc. in Information Technology — WES GPA: 3.83	NRW, Germany
Technical University of Ostwestfalen-Lippe	*Mar 2023*
B-Tech in Electrical Engineering — WES GPA: 3.64	Gujarat, India
Charotar University of Science and Technology	*Aug 2017*

CERTIFICATIONS

- Preparing for AWS Certified Solutions Architect – Associate   *Expected Oct 2025*
- AWS Cloud Practitioner – Amazon Web Services   *Dec 2024*
- AWS Certified ML Specialist – Amazon Web Services   *Feb 2024*
- Advanced Machine Learning – IBM on Coursera   *Oct 2023*
- Professional Data Analytic – Google on Coursera   *Jun 2023*