ASHIN SHANLY

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PROFESSIONAL SUMMARY

Software Engineer with a Master's in Technology (Computer Science & Engineering) and three years of industry experience, designing and delivering scalable, high-performance systems. Proficient in leveraging cloud platforms such as OCI and GCP and harnessing advanced machine learning and data engineering techniques to build robust, innovative solutions. Adept at translating complex technical challenges into reliable, secure, and user-centric applications that drive measurable business impact.

TECHNICAL SKILLS

- **Programming Languages and Frameworks:** Python, C/C++, SQL, Java, JavaScript, Django, React
- **Cloud Technologies:** Oracle Cloud Infrastructure (OCI), Google Cloud Platform (GCP)
- **Big Data Technologies:** Apache Spark, Delta Lake, Hadoop
- **Machine Learning Frameworks:** TensorFlow, PyTorch, Keras
- **DevOps:** Docker, Kubernetes, Terraform
- **Tools:** Android Studio, XAMPP

PROFESSIONAL EXPERIENCE

Member of Technical Staff (SDE-2) 2022 - Present
Oracle India (Oracle Cloud Infrastructure) *Bengaluru, India*

- Architected **petabyte-scale** ETL pipelines using PySpark on OCI to reduce data processing latency and cost, delivering high-throughput real-time ingestion, transformation, and aggregation of global customer usage data; developed a fault-tolerant, distributed framework that processes **billions of records daily** and enables dynamic, actionable reporting.
- Designed and implemented an enterprise-wide **Generative AI RAG chatbot**, leveraging a vector database for high-speed document retrieval and fine-tuned LLMs for accurate, context-driven query responses. Automated **60%** of manual query handling, enhanced query resolution accuracy by **30%**, and significantly elevated cross-departmental operational efficiency.
- Led a team of 5 developers in redesigning data load processes by migrating from a legacy relational data warehouse to the **Delta Lake ecosystem**, leveraging robust ACID compliance, dynamic schema evolution, and time travel to ensure superior data integrity and auditability. Optimized storage with file compaction and partitioning, reducing I/O overhead and **boosting query performance by 40%**, while seamlessly integrating with Spark-based ETL workflows for real-time analytics and cost-efficient data management.
- Created an **instance and rack decommissioning dashboard** that accelerated throughput for decommissioning bare-metal and virtual machine instances. Enhanced multi-dimensional visibility (rack, host, and instance levels), optimising data center resource allocation and saving thousands of dollars annually by improving operational efficiency and reducing idle resource costs.
- Led the design and implementation of robust **data archival and purging frameworks**, automating the identification of cold and inactive data. Migrated historical data to cost-effective, long-term storage while purging obsolete records in compliance with retention policies. Achieved a **25% reduction in long-term storage costs** and enhanced overall database performance by optimising active data sets. Collaborated with cross-functional teams to streamline data governance and ensure audit readiness.

Machine Vision Research Scientist Intern May 2021 - Jul 2021
TCS Research and Innovation Labs *Bengaluru, India*

- **Pioneered advanced research in tree segmentation** by leveraging airborne and spaceborne LiDAR technology, driving a notable increase in segmentation accuracy and advancing precision in geospatial analysis for forestry applications.
- **Engineered an innovative tree segmentation model** utilising a hybrid machine learning and signal processing framework, achieving an 18% boost in model accuracy, thereby setting a new benchmark for high-precision environmental monitoring systems.
- **Implemented cutting-edge data fusion techniques**, seamlessly integrating geospatial point cloud data with hyperspectral imagery to significantly enhance classification models, leading to more refined and actionable environmental insights.

EDUCATION

Masters in Computer Science and Engineering 2020 - 2022
Indian Institute of Technology Gandhinagar (IIT GN)
Awarded Director's Silver Medal for Academic Excellence (9.0/10 CGPA)

Bachelors in Computer Science and Engineering 2016 - 2020
Government Engineering College Thrissur
Dean's List for Academic Excellence (9.11/10 CGPA)

SELECTED PROJECTS AND PUBLICATIONS

- **Accelerated Implicit Neural Representations:** Engineered an advanced **encoder-decoder multiscale block partitioning network architecture** to represent N-dimensional signals via implicit neural representations. Achieved significant improvements in training and inference speeds, **surpassing state-of-the-art models by 25%** in computational efficiency. This research tackles complex signal representation challenges, optimising memory usage and scalability for high-dimensional data. [Pre-print]
- **Semantic-Enhanced Image Captioning System with Siamese-GCN:** Designed an innovative image captioning system using **Siamese Graph Convolutional Networks (S-GCN)** integrated with a non-parametric **Kernel Activation Function (KAF)** and an LSTM-attention mechanism. The system enhanced semantic understanding of image data, enabling more accurate and context-aware captions. The work was recognised and **published at the 9th ACM IKDD CODS and 27th COMAD Conference**, contributing new insights into the field of image-to-text transformation. [Publication]
- **Neural Language Model for Reverse Dictionary:** Developed a novel **neural language model** to predict target words based on informal descriptions using a combination of **CBOW model**, **attention word embedding**, and a **POS tagging channel**. The model efficiently captured sub-word information, yielding more accurate predictions. This work was presented at the **8th ACM IKDD CODS and 26th COMAD Conference**, showcasing advancements in natural language understanding and word prediction mechanisms. [Publication]

CERTIFICATIONS

- Oracle Cloud Infrastructure Architect Associate - Oracle
- Essential Cloud Infrastructure: Core Services - Google

AWARDS AND ACHIEVEMENTS

- Awarded **Director's Silver Medal** for outstanding academic performance, IIT Gandhinagar
- **ICPC** 2018 Regional Finalist
- **Runner-up** in All-Kerala Innovative Idea Grant Competition.