SNEHA GEORGE GNANAKALAVATHY
Senior Data Engineer
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PROFESSIONAL SUMMARY

Experienced Data Engineer in building cloud-native data platforms, scalable pipelines, and analytics solutions. Proven ability to reduce costs, automate reporting, and ensure data compliance at scale. Completed MSc in Data Science with Distinction at the University of Exeter and actively seeking a high-impact data role in a tech-driven organisation. **Authorised to work in the UK**.

SKILLS

- **Programming Languages:** Python, Java, R, SQL
- **Cloud Platforms:** AWS (Lambda, AppSync, Step functions, S3, Glue, Redshift, Athena)
- **Data Engineering Tools:** Data Pipeline, ETL/ELT (dbt), Airflow, Data Warehousing, Teradata, Snowflake, Hadoop, Databricks
- **Tools & Frameworks:** Scikit-learn, Pytest, Matplotlib, Seaborn, Hive-runner, Fitnesse, CI/CD, GitHub Actions, Jenkins, Agile
- **Soft Skills:** Problem Solving, Accountability, Independent Execution, Growth Mindset, Collaboration
- **Global Exposure:** Multi-Cultural Adaptability (Mexico, US, UK), International Client Engagement

WORK EXPERIENCE

Accenture, India | Data Engineering Associate Manager | July 2017 - September 2024
Client: Cigna Health insurance, US

- Architected scalable AWS cloud infrastructure resulting in 40% reduction in infrastructure costs and 99.9% system uptime
- Led enterprise data migration initiative, supporting 15+ business critical reports serving 250+ healthcare providers to automate 80% of manual reporting processes to reduce report generation time from 48 hours to 6 hours
- Engineered dimensional data models across databases ensuring 100% compliance with healthcare data standards
- Conducted 40+ sessions to gather ETL requirements, achieving 95% accuracy and 50% fewer revisions
- Managed end-to-end production deployments collaborating with 12+ teams to achieve 100% success rate, zero incidents
- Streamlined financial tracking for employee shifts and overtime, ensuring 100% alignment with budget policies
- Led and mentored a team of data engineers, fostering technical excellence and cross-functional collaboration across projects

Anjana Software Solutions | Senior Software Engineer | May 2013 – July 2017
Client: Farmers Insurance, US

- Provided production support excellence for systems maintaining 95% SLA compliance with issue resolution time of 24 hours
- Achieved zero-defect delivery record across multiple releases maintaining high customer satisfaction scores
- Developed web service integrations that reduced data processing time by 25% and improved system

EDUCATION

MSc in Data Science, First Class with Distinction | University of Exeter | UK | September 2024 – September 2025
MBA in Technology Management, First Class | Anna University | India | February 2015 – August 2017
BE in Electronics and Communication Engineering, First Class | DMI College of Engineering | India | August 2008 – May 2012

CERTIFICATIONS

- **AWS Certified** - Data Analytics Specialty
- **AWS Certified** - Solutions Architect Associate
- **AWS Certified** - Developer Associate
- **Databricks Certified** - Data Engineer Associate
- **IBM Certified** Data Science Professional

ACHIEVEMENTS

- **"Exeter Award"** Recipient - Recognised for professional development and extracurricular engagement
- **"Academic Representative"**, Computer Science Department - Improved academic policies through faculty liaison
- **"Employee of the Quarter"** Award Recipient - Recognised by "Cigna Healthcare" for innovative project delivery
- **"Gold Medal"** Recipient - for ranking 18th in the overall department at state level in the Undergraduate programme

KEY PROJECTS

Capri-CT: Causal Analysis and Predictive Reasoning for Image Quality Optimisation in Computed Tomography

- Implemented Capri-CT, a causal deep learning framework employing VAEs and ensemble modelling to predict CT image quality (SNR) and optimise scan protocols.
- Submitted findings to the *MICCAI 2025 Conference* and *BMC Medical Imaging Journal*, demonstrating its clinical value.
- The preprint is available at https://arxiv.org/abs/2507.17420v1.

ThroneGraph: Mapping Power Shifts in Game of Thrones through NLP and Network Analysis

- Analysed the evolution of power dynamics in Game of Thrones by applying sentiment analysis and created custom NLP pipelines to approximately 3,000 dialogues across more than 50 characters.
- Designed interactive force-directed visualisations using NetworkX and Gephi, alongside narrative timelines, to illustrate shifting alliances.
- Delivered a data storytelling slide deck to communicate findings to a mixed audience, illustrating the utility of NLP and network analysis in modelling influence and behaviour.

Data-Driven Cost Insights: Predictive Modelling for Population Health Management

- Created ensemble machine learning models to predict total healthcare costs with 87% accuracy using historical claims data from a dataset comprising 500,000 patients.
- The analysis supported actionable insights for benchmarking provider efficiency, managing risk across populations, and informing value-based care strategies.

UK WORK EXPERIENCE

The Range (Wilko), UK | Customer Service Manager | October 2024 – Till Date

- Led frontline operations managing team performance during high-volume retail periods serving 500+ customer transactions
- Oversaw end-to-end customer experience including payment processing, refund management, click-and-collect fulfillment
- Ensured operational excellence through staff coordination, inventory management at point-of-sale, cash reconciliation