

Renjie Liu

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Data Engineering • Business Intelligence • Process Automation

Summary

Senior data engineering professional with 15+ years of experience driving data initiatives, modernizing legacy reporting processes, and leading automation initiatives for global organizations including the United Nations. Skilled at translating complex requirements into reliable data pipelines and scalable analytics. Proven ability to apply SQL, Python, ETL/ELT pipeline design expertise, collaborate with cross-functional teams, and deliver solutions that reduce manual effort and facilitate decision-making.

Skills

- **Databases & Languages:** SQL, Python, SQL Server, Oracle, PostgreSQL, MySQL, C#
- **BI Tools:** Power BI, SAP Business Objects, Tableau, Crystal Report
- **Other:** Data Engineering, ETL/ELT, Requirement Analysis, Project Management

Experience

Senior Business Intelligence Consultant

United Nations Headquarters (Consultant), September 2015 - December 2025

- Rebuilt a multi-stage HR reporting pipeline by redesigning data-collection steps, streamlining the process, and automating workflows with SQL and Python, reducing delivery from 3 weeks to 3 days.
- Automated a legacy reporting process with the platform SDK and built a GUI with C# to burst reports for hundreds of departments, reducing effort from 5+ days to 20 minutes.
- Developed SQL-based orchestration for 150+ production jobs and implemented monitoring that integrated exception reports with historical execution metrics to improve operational reliability.
- Redesigned core components of data pipelines to improve analytical depth and trend analysis; adopted for General Assembly reporting, increasing UN system-wide transparency.
- Optimized high-cost SQL-based reporting processes through comprehensive performance tuning and adding calculation layers, cutting execution time from 20+ minutes to under 2 minutes.
- Refactored data pipelines to solve inconsistencies across data sources; added validation layers for millions of daily inbound records with 200+ attributes, eliminating recurring outliers in the workflow.
- Built modular data-validation templates that standardized checks across hundreds of HR datasets, improving data integrity and reducing repetitive manual validation.
- Mentored junior analysts through hands-on problem-solving and data warehouse best practices, enabling independent handling of ad-hoc requests.

Technical Analyst

PepsiCo (Infosys), March 2013 - September 2015

- Collaborated with cross-functional teams and vendors to clarify business requirements, translated them into actionable technical specifications, ensuring accurate system implementation.
- Established SLAs with business partners and vendors to streamline delivery expectations, resulting in over 90% on-time reporting.
- Integrated data from SQL Server, Oracle, and flat-file operational datasets into a unified reporting repository, providing stakeholders with a single source of truth, enabling data-driven decisions.
- Rewrote legacy scripts that looped through datasets with millions of records; introduced table partitioning and indexing, reducing workflow runtime from 25 minutes to 20 seconds.
- Managed day-to-day work for the offshore team and delivered project status updates to stakeholders, preventing miscommunication and keeping deliverables on track.

Business Intelligence Engineer

Infosys Limited, August 2009 - March 2013

- Delivered full reporting solutions, from semantic modeling to dashboards; conducted training sessions for sales managers to ensure systems could be adopted with minimal friction.
- Leveraged BusinessObjects SDK to develop monitoring scripts that tracked failed report executions, enabling proactive fixes and improved reporting reliability for end users.
- Executed system-wide performance tuning on complex table joins by applying materialized views, table partitioning, and bitmap indexes, significantly improving query speed and report responsiveness.
- Automated manual user-configuration workflows by developing scripts that cleaned and validated input files, reducing setup time from 2+ hours to under 30 minutes.

Professional Development

- Google Data Analytics Certificate
Coursera, March 2022
- Google Project Management Certificate
Coursera, April 2021

Education

Geography Information System (B.S. Degree)

Shanghai Normal University, China

September 2005 - June 2009