

Jie (Jack) Deng

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SKILLS

Languages: Python, C#, Java, SQL, JavaScript/TypeScript

Backend & Data: RESTful APIs, Distributed Systems, Data Pipelines, SQL Server, MySQL, PostgreSQL, ETL

Frontend & Web: React, Next.js, HTML/CSS, Tailwind CSS, Payload CMS

Tools & Cloud: AWS (S3), Databricks, Vercel, Supabase, Git, Boomi, Docker

EXPERIENCE

Value Windows & Doors

Duarte, CA

Software Engineer (Backend & Data)

01/2024 – Present

- **Spearheaded 0-to-1 Cloud Data Architecture:** Engineered automated backend pipelines in Python and C# to migrate legacy database records, leveraging AWS S3 and Databricks for scalable distributed storage and compute.
- **Full-Stack Internal Systems:** Developed and deployed secure internal web portals using C# (Backend) and React (Frontend) to digitize manual operational workflows and expose real-time data insights to business teams.
- **Architected Centralized Data Warehouse:** Built a multi-tiered data warehouse from scratch, seamlessly synchronizing high-volume data across internal servers, QuickBooks, and NetSuite APIs.
- **Robust Backend Integrations:** Designed fault-tolerant workflows processing tens of thousands of daily records (orders, inventory, billing); implemented retry queues and idempotent logic to reduce manual reconciliation by ~70%.
- **System Reliability & Optimization:** Enforced strict XML/XSD schema validation at service boundaries; optimized SQL Server execution plans, reducing synchronization latency by ~40% and lowering integration failures by >60%.

APEXUS-TECH

New Brunswick, NJ

Software Engineer Intern

07/2022 – 01/2024

- **Backend & API Integration:** Developed backend services in Python to ingest, transform, and persist financial data from third-party APIs, handling tens of thousands of time-series records per execution.
- **Data Pipeline Optimization:** Designed and maintained ETL pipelines with MySQL, improving batch processing efficiency by ~40% through query optimization and data restructuring.
- **Dashboard Development:** Built internal monitoring dashboards using HTML and JavaScript, reducing manual verification effort and improving system observability.

Northeastern University

Boston, MA

Data Warehousing & SQL Tutor

03/2023 – 07/2023

- Instructed graduate students on SQL performance tuning, indexing strategies, and execution plan analysis; helped refactor inefficient queries to achieve 2–5× performance improvements.
- Guided schema design trade-offs to balance normalization, query performance, and system maintainability.

PROJECTS

Personal Digital Hub & Headless CMS (jackdeng.cc)

Next.js, React, Payload CMS, PostgreSQL, Tailwind CSS

- Architected a full-stack, highly optimized web application combining a public-facing Next.js frontend with a secure, self-hosted Payload CMS backend for content and API routing.
- Integrated PostgreSQL (hosted on Supabase) with Drizzle ORM to manage dynamic data models, blogs, and customized tool permissions.
- Deployed the application via Vercel with edge routing configurations, ensuring high performance, zero-maintenance infrastructure, and complete data sovereignty.

EDUCATION

Northeastern University | M.S. Analytics (GPA: 3.93/4.0)

03/2022 – 07/2023

University of Sussex (UK) | M.S. AI & Adaptive Systems

10/2020 – 02/2022

Ningbo Tech University (China) | B.E. Computer Science

09/2016 – 06/2020