

# BHUVAN SHAH

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## EDUCATION

### University of Southern California

Master of Science in Computer Science (3.61/4.0)

Los Angeles, California, United States

August 2023 - May 2025

### Indus University

Bachelor of Technology in Computer Science (9.63/10.0)

India

July 2019 - May 2023

## TECHNICAL SKILLS

**Programming Languages:** Python, Java, JavaScript, HTML, CSS, C, C++, C#, SQL, Go

**Web Technologies & Frameworks:** React.js, Node.js, Express.js, Spring Boot, Django, FastAPI, GraphQL, REST APIs

**Databases & Storage:** PostgreSQL, MongoDB, MySQL, Neo4j, DynamoDB, Firebase

**Cloud, DevOps & Others:** AWS (EC2, Lambda, S3, RDS), Azure, GCP, Docker, Kubernetes, Jenkins, CI/CD, Terraform, Git, Linux, Agile/Scrum

**Soft Skills:** Cross-functional Leadership, Collaboration, Critical Thinking, Analytical Problem Solving, Adaptability, Mentorship & Teaching

## EXPERIENCE

### Easley Dunn Productions, Inc.

Los Angeles, California, United States

#### Software Development Engineer

July 2025 - Present

- Collaborated with 5 cross-functional teams to engineer backend microservices using **Java** and **Spring Boot** with **RESTful APIs** to process real-time telemetry from 5 distributed systems, which reduced data ingestion latency by **60%**
- Optimized a critical **C++** data processing module by implementing a custom memory allocator and refactoring multi-threaded logic, reducing latency by **25%** and memory usage by **40%**
- Revamped a legacy data validation service by optimizing **PostgreSQL** lookups and adding composite indexes, cutting average query latency from **2 seconds** to under **100ms**

### University of Southern California

Los Angeles, California, United States

#### Graduate Teaching Assistant

May 2024 - May 2025

- Mentored **360+** students in system architecture design and algorithm optimization, implementing design patterns and OOP principles in **Python** and **C#**, achieving **90%** success rate in scalable, production-ready applications
- Architected **6+** interactive simulation platforms integrating real-time event streams and ML pipelines, enabling students to process **10K+ events** and experiment with AI-driven system design

### Prompt Softech

India

#### Data Scientist Intern

December 2022 - May 2023

- Developed distributed microservices architecture using **Java** Spring Boot and **Kubernetes**, implementing async processing with **PostgreSQL** and **Apache Kafka** that improved pipeline scalability by **40%** and enabled fault-tolerant model deployment
- Designed **CI/CD pipelines** with **Jenkins** and **Docker** to automate build, test, and deployment stages across microservices, cutting integration overhead by **30%**

### VuelInternational

India

#### Software Developer Intern

June 2020 - October 2020

- Spearheaded a high-performance **React/Node.js** architecture with optimized **MongoDB** schema and indexing, boosting **API** throughput by **25%** and doubling concurrent users
- Containerized and deployed microservices using **Docker** and **AWS**, reducing deployment issues and improving reliability by **20%**

## ACADEMIC PROJECTS

### NoteScape | React, Node.js, D3.js, Docker, Neo4j, FastAPI, Python

- Developed a fullstack knowledge graph app with **GraphQL APIs** to visually map concepts using **React** and **D3.js** frontend
- Engineered a custom **WebGL** rendering engine to visualize graphs with **2,000+ nodes**, ensuring zero-lag & seamless UI/UX
- Built a scalable **Python FastAPI** backend with **Neo4j**, boosting query performance for complex, multi-level relationships by **60%**
- Implemented **retrieval-augmented generation** using vector embeddings and **LLM** summarization for natural language Q&A

### Real-time Document Collaboration Platform | React, Node.js, Express, MongoDB, WebSockets, JWT

- Architected a Google Docs style platform using **MongoDB**, **Express.js**, and **Node.js** with **WebSockets** for real-time collaboration
- Designed a **distributed system** to handle **200+** concurrent editing sessions with instant data synchronization across all clients
- Implemented Operational Transforms to reduce merge conflicts by **85%**, ensuring high data integrity across all documents
- Secured the app with **JWT authentication** and role-based access control, deploying on **Azure** to ensure **99.9%** uptime

### PII Detection and Masking | PyTorch, NumPy, Pandas, Transformers, NLP, LLMs

- Built an end to end **NLP** pipeline using **PyTorch** and **Transformers** to detect and mask **94** types of PII for data privacy
- Fine-tuned a large language model (DeBERTaV3) on a custom dataset, achieving a **99.56% F1-score** & **27%** reduction in false positives
- Engineered the inference pipeline using **PyTorch** for modeling and **NumPy** & **Pandas** to process over **10K** documents per hour
- Integrated **Elasticsearch** for scalable, secure searching of millions of anonymized documents with sub-second query latency