

Raj Paresh Thaker

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EDUCATION

University of Southern California (Masters of Science in Computer Science)

January 2018 – December 2019

Relevant coursework: Algorithms, Artificial Intelligence, Web Technologies, Natural Language Processing, Information Retrieval, Data Mining, Software Engineering.

GPA: 3.81/4.00

University of Mumbai, D.J. Sanghvi College of Engineering (Bachelor in Information Technology)

August 2012 – July 2015

Relevant Coursework: Software Engineering, Data Warehousing & Business Intelligence, Cloud Computing.

Percentage: 74.40%, Top 10%

PROFESSIONAL EXPERIENCE

Google - Software Engineer

Feb 2020 – Present

- **AI/ML Search Architecture:** Spearheaded the architecture and implementation of a Retrieval Engine (RE) for large-scale indexing. Engineered high-dimensional similarity search capabilities that achieved a **40x latency improvement** and a **6x reduction in CPU** utilization. Led a team of 4 engineers to deliver this mission-critical infrastructure.
- **Financial Data (Revenue Impact):** Orchestrated a 3-year cross-functional reconciliation initiative between Finance and XAA reporting systems. Authored strategic technical proposals that **slashed data discrepancies by 70%** and secured the **integrity of \$1B+** in business reporting. Guided 6 SWEs through the successful resolution of long-standing critical data gaps (**99.61% accuracy**).
- **Distributed Systems Optimization:** Overhauled high-throughput Flume pipelines, driving **65% SLO improvement** for critical datasets. Architected data warehouse with dynamic field/row-level retention policies, leading team from initial design to production.
- Architected data warehouse featuring configurable field/row-level retention; led 4-engineer team through its full design to production.
- **Operational Efficiency:** Engineered a self-service client dimension onboarding system, eliminating manual toil and **saving ~2000 SWE hours annually**. Automated experimentation metric reporting for 60+ tables with 100% "auto-pilot" operation.
- **System Robustness & Automation:** Designed a standardized Monitoring and Alerting Framework deployed across 200+ pipelines. Achieved an 80% reduction in alert noise and increased staging **environment stability from 75% to 98%**.
- **Leadership & Community:** Tech Lead for 15+ Google Tech Immersion (GTI) projects. Conducted 35+ technical interviews for software engineering roles. Holder of Google-wide Java and Go Readability certifications.
- **Achievements:** 1 Cloud Tech Impact Award, 25+ Peer Bonus, 3 Perfys, 5 Grungys, 5+ Spot Bonus.

Amazon AWS – Software Development Engineering Internship

May 2019 – August 2019

- **Predictive Maintenance AI:** Leveraged **Amazon SageMaker** to deploy ensemble forecasting models for IoT device performance; achieved <3s inference latency via AWS Lambda serverless architecture.
- **Economic Impact:** Designed an S3-based real-time dashboard using Highcharts; projected **annual maintenance savings of €600K** through proactive failure prediction.

USC Institute for Creative Technologies (ICT) – Student Research Programmer

May 2018 – May 2019

- **RL Model Training:** Developed backend services to train Reinforcement Learning (RL) models on 300K+ records for the Virtual Humans Project, predicting user actions with **85% confidence**.
- **Messaging Patterns:** Devised "Proposal Messaging Patterns" using ZeroMQ for interprocess communication: SuperGLU framework.

JPMorgan Chase & Co. (JPMC) – Software Engineer

July 2015 – December 2017

- **System Optimization:** Led engineering of a strategic onboarding process for Single-Use Accounts (SUA), reducing supplier effort by 85% and enabling **1,500+ new institutional clients**.
- **Strategic Leadership:** Served as **Scrum Master** for "ThinkIT"; platform-driven ideas saved **3,000+ annual FTE hours** globally.
- **Automation:** Remodeled Selenium framework, **increasing regression coverage 35%** and **reducing manual testing cycles 25%**.

PROJECTS

Recommendation System – Yelp Dataset

2019

- Implemented user-based & item-based collaborative filtering for business recommendations using PySpark over 400K records.
- Achieved RMSE 0.9 & improved accuracy of item-based CF by 10% by finding similar pairs using Local Sensitivity Hashing (LSH).

Sentiment Analysis for Amazon Reviews

2018

- Designed a Machine Learning Ensemble Model to classify Amazon user reviews as Positive/Negative; Achieved 91% accuracy by cross-validation, ROC curve analysis, and Hyperparameter Tuning.
- Crafted a pipeline for Data Pre-processing – Stemming, Removal of Stop Words & Punctuations. Performed Exploratory Data

Analysis on the dataset and derived conclusions with Data Visualization paradigms using Pandas and Scikit-learn libraries.

Publication & Grants

- **Journal Publication:** “Research Experience for Undergraduates” – Supported by the **National Science Foundation** (NSF 1560426) and the Office of **Naval Research** (ONR N00014-16-1-2820) STEM Program. [DOI: 10.1080/15391523.2020.1771640]
- **Book Chapter:** “Design Recommendations for Intelligent Tutoring Systems: Volume 7” – Sponsored by the **U.S. Department of Defense (DoD)**. Focused on self-improving systems and advanced computing architectures.
- **Open Source:** Contributor to SuperGLU Framework, developing distributed messaging patterns for large-scale simulations.
- **ORCID ID:** 0009-0001-5000-2157

Awards & Honors

- **1 Cloud Tech Impact Award:** Technical excellence and collaboration in Google Cloud's data infrastructure.
- **3 Perfy Awards:** Exceptional performance optimizations in Google production code.
- **5 Grungy Awards:** For resolving deep-seated technical debt and improving system reliability.
- **25+ Peer Bonuses & 5+ Spot Bonuses:** For consistent technical leadership and cross-functional impact.

Professional Memberships & Affiliations

- **Sigma Xi, The Scientific Research Honor Society:** Full Member (Elected based on research achievements).
- **Senior Member IEEE:** Recognizing significant performance and professional maturity.