Parth Jayantilal Jain

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EDUCATION

San Jose State University, San Jose **August, 2017 - May, 2019**
Masters in Computer Science
VIT, Mumbai, India **July, 2012 - August 2016**
Bachelor of Engineering in Computer Science

TECHNICAL SKILLS

- Languages: Java, Python, ReactJS, Javascript, HTML, CSS, PHP, TypeScript.
- Technologies: ElasticSearch, DynamoDB, MySQL, AWS Technologies, Git, Docker, Kubernetes.
- Frameworks: Guice, Spring, Junit, TensorFlow, Keras, Apache Spark.

PROFESSIONAL EXPERIENCE

Amazon.com, New York - (Amazon Advertising) - *Software Development Engineer* **August, 2019 - Present**

- Techlead in a team of 3 engineers to redesign Amazon Ads' Advertiser Catalog service. This involved collaborating with the business to define the BRD, overhauling the campaign creation workflow, migrating to AWS, and creating a Tier-1 Restful ECS service and data ingestion pipeline. The pipeline, which used SQS, SNS, Step Function, Lambda and Open Search, indexed data using an intelligent chunking algorithm across serverless workers and handled multiple datasets, each with over 1 billion records. The ECS service was responsible to vend this data by performing complex queries and supported an average TPS of 8k with 3 Nines of availability. The API spec was written in Open API 3.0, infra-as-a-code using CDK(Typescript) and service was implemented in JAVA. The system was migrated using feature flag mechanism and supported multi-region and multi-AZ availability resulting in a $48M revenue increase and a 30% productivity boost for Amazon's sales representatives.
- Implemented an orchestration system, as part of a 3 member team, to enable 1-click campaign creation and campaign optimization for identified opportunities. This was achieved by creating a highly scalable distributed Lambda Service which automated tasks previously done manually by Amazon's sales team, utilizing AWS Step Functions and supported 1 million workflow executions per day. To manage the high throughput and 150+ dependencies we built a tokenization mechanism to effectively manage different workflows to run in parallel based on downstream dependencies constraints. We also created a priority queue scheduler using ECS and Open Search to schedule these workflows based on assigned priorities. We also implemented a callback mechanism using Api-Gateway, Lambda and DynamoDB for dependencies that took longer to respond and utilized AWS App Config to manage workflow configurations. This effort served as the foundation for Amazon Sales representatives to recommend advertising opportunities to advertisers making it a Tier-1 service and resulting in $52 million in revenue.
- Developed a reusable React component in JavaScript, backed by a Lambda service that provided a low-code solution, to manage user preferences across applications. Infrastructure was written in CDK (Typescript), the service was implemented in Java with multi region availability, and backed by DynamoDb. The component was used by three clients in multiple regions, storing around 20 million preferences per region with a P95 of 10ms.
- As a senior developer, I spearheaded multiple org-level initiatives, including designing and implementing a peak readiness planning process that enabled us to conduct load tests on highly used Tier-1/2 systems. By identifying and mitigating potential bottlenecks and ensuring systems were capable of handling high traffic during peak periods, we generated 75 million in Ads revenue. Additionally, I created a streamlined System Integration process that onboarded 14 applications and defined responsibilities from product manager to developer. This process is still being used today to onboard new applications. Finally, I played an integral role in the hiring process, helping the team grow from 6 to 30 members and conducting over 14 interviews. I also onboarded 8 developers and mentored 5 others across the org.
- Optimized an algorithm to convert complex input filters into ElasticSearch-supported filters by implementing a tree search algorithm and adding support for percentile-based filters. This optimization decreased the api latency by 38% and enabled users to create campaigns with ease using complex nested filters, resulting in a 45% increase in the adoption rate of new campaign creation.

Trinet Inc., Dublin, California - *Software Developer Intern* **June, 2018 - August, 2018**

- Implemented access control for menus based on role, position, department, and company criteria.
- Developed a service to display API maintenance status, including effective date, completion time, and alert level.

SELECTED ACADEMIC PROJECTS

- Developed heart disease risk predictor using machine learning algorithms that track pulse rate via Android wear and notify family members - Python, Android, Google Firebase
- Designed and Implemented image classification system using Deep learning algorithms like CNN, Single and Complete linkage hierarchical clustering, Genetics Algorithm and K-Means clustering - Python, Keras, Scikit, Numpy, Pandas
- Implemented text summarization and text music generation using LSTM and Jython -Python, Keras, Scikit, Numpy, Pandas, NLTK
- Implemented Traveling SalesPerson Problem Solver using Genetics Algorithm using pyevolve library, Greedy Algorithm and A-Star algorithm - Python