

# Ashwini Ainchwar

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## Education

### University of Southern California

Master of Science in Computer Science; GPA: **3.83/4**

Aug 2022 - Oct 2024

Los Angeles, USA

### Visvesvaraya National Institute of Technology

Bachelor of Technology, Computer Science and Engineering; GPA: **9.35/10**

Aug 2014 - May 2018

Nagpur, India

Selected Coursework: Database Systems, Operating Systems, Distributed Systems, Information Retrieval, Machine Learning for Databases, Natural Language Processing, Machine Learning for Data Science, Analysis of Algorithms

## Experience

### C3.ai

Nov 2024 - Present

*Software Engineer*

- Developed data generation pipelines to train a machine learning model, implemented backend logic for rule-based recommendations, and created UI components to showcase actionable insights for enhancing energy efficiency and identifying cost-saving opportunities.
- Designed the data model and built backend infrastructure for an application developed for an energy management firm, enabling efficient retrieval and analysis of terabytes of structured and unstructured data to support strategic decision-making.

### JP Morgan Chase

Jul 2018 - Aug 2022

*Associate, Software Engineer*

- Delta Contact ETL:** Led design and implementation of a Java-based data aggregation and distribution system for employee data management. The system was used for survey distribution and improving the experience of around **350k employees** globally. The highly concurrent design of our implementation provided a **15x performance improvement** over the legacy system.
- Experience Management:** Engineered and deployed a suite of microservices, integrating tools like Qualtrics, transforming survey management and operational data integration for enhanced product development. This application improved user experience across the firm, with adoption by **20+ product teams** to streamline processes and a **increase of 20% in customer satisfaction**.
- Product Roadmap Tool:** Developed data fetch jobs and REST APIs with Spring Boot, enabling dynamic, customizable, and shareable product roadmaps from JIRA data. This innovation cut manual creation time and reduced data duplication, supporting over 10 instances per roadmap.

### JP Morgan Chase

May 2017 - Jul 2017

*Summer Intern*

- Financial Transaction Processing:** Built an in-house alternative to a proprietary debit / credit card transaction encoding system. This system reduced transaction processing times, increased flexibility during format changes, and saved licensing costs.

## Select Projects

- GenProm (Integrating LLMs and programming):** Leveraged a tree of thought approach and search methods to enable the GPT model to navigate and refine its steps, achieving a **10% improvement** in solving cryptogram accuracy.
- HAYSTAC [IARPA research]:** Analyzing **per second** spatio-temporal human activity **data of 10k people over a week** to generate activity and trajectories which can be hidden in the normal behavioral pattern.
- Aster [short paper]:** Leveraging space-efficient pre-trained models to generate column sketches of structured datasets for cardinality estimation, this provides an **8x reduction in memory usage** over state-of-the-art without loss of estimation accuracy.
- Sentiment Analysis:** Achieved **83% accuracy** in sentiment analysis of Amazon reviews through strategic application of NLP techniques and evaluation of vectorization methods (BoW, TF-IDF, Word2Vec) against various ML models (SVM, RNNs, LSTMs, GRUs).
- Day 1 Onboarding:** Aggregated data from over **7+ sources** to create dashboards for the Leadership Team, identifying onboarding bottlenecks and increasing new joiners who began working on Day 1 by **25%**.
- Traffic Surveillance System:** Developed a real-time algorithm to identify stopped vehicles, combining object detection and tracking for improved accuracy and speed. Trained a CNN for detection and Lucas-Kanade optical flow algorithm for tracking.

## Technical Skills

- Languages:** Java, Python, C, C++, Scala, R, JavaScript
- Libraries:** PyTorch, NumPy, Pandas, NLTK, Scikit-learn
- Frameworks:** Spring Boot, Angular, Django, Ruby on Rails, React
- Misc:** AWS, Cloud Foundry, MQs, Hadoop, SQL, NoSQL, Data Structures, Backend, Tableau, Splunk, Git, Jenkins, Maven, JUnit

## Leadership & Involvement

- Served as Course Producer for a Machine Learning course at USC, enriching academic experience and facilitating peer learning.
- Organized and participated in Diversity & Inclusion initiatives at JP Morgan, enhancing organizational culture.
- Lead a special interest group of 50+ people for Software Engineering at JP Morgan, promoting best practices and new tech adoption.