

# KARTHIK CHINTAMANI DILEEP



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Portfolio

## Experience

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### Software Engineer, Addgene | Boston, Massachusetts

May 2023 – December 2023

- Engineered a predictive model using Machine Learning algorithms (Random Forests, XGBoost) for demand forecasting, leveraged A/B testing, causal inference to optimize inventory and supply chain management, reducing overstock by 30%.
- Leveraged AWS S3 to store petabyte-scale historical sales data and large genomic datasets for robust data accessibility.
- Implemented AWS Lambda and AWS SageMaker for automated data preprocessing and streamlined deployment.

### Machine Learning Engineer, DSU Dental Sciences | Bangalore, India

August 2020 - May 2022

- Automated clinical diagnosis for bone age determination using advanced deep learning methods to elevate patient care.
- Trained and fine-tuned MobileNet Convolutional Neural Network utilizing TensorFlow and Keras frameworks.
- Performed data preprocessing, cleaning, and exploratory data analysis on large datasets using Pandas, NumPy, OpenCV.
- Research published in peer reviewed journal and presented at the Springer ICAIHC conference, 2022.

### Data Engineer, MARG Innovations | Sunnyvale, California

January 2020 – August 2020

- Streamlined user information extraction and validation using Computer Vision and Microservices for a fast-paced startup.
- Built an ETL pipeline to extract image data into PostgreSQL DB and architected RESTful microservices.
- Discovered dominant topics, sentiments from user reviews through advanced text analytics using NLP techniques.
- Crafted a dashboard to visualize 10K reviews using Matplotlib and delivered actionable business insights.

### Data Science Intern, Dayananda Sagar | Sunnyvale, California

May 2019 – July 2019

- Conducted statistical analysis on remote sensing satellite data to compute vegetation indexes to monitor landscape.
- Applied statistical analysis to remote sensing data, created heatmaps for visualizing vegetation indices using ggplot.

## Skills

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**Languages:** Python, Java, C++, R, Bash / Shell scripting

**Technologies/Frameworks:** Tensorflow, Keras, Spark, Kafka, Pandas, Numpy, Scikit-learn, REST API, NLTK

**Databases:** SQL, MySQL, Postgres, NoSQL, MongoDB, Redis

**Cloud:** AWS (EC2, SageMaker, VPC, Lambda, RDS, DynamoDB, S3, Cloudwatch, IAM), Microsoft Azure

**DevOps:** Docker, Jenkins, Kubernetes, ElasticSearch, Continuous Integration/Continuous Deployment, Git, GitHub, Jira

**Software Development:** Agile, Scrum, Confluence, Problem-solving, Product management, Debugging

## Projects

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### LLM-Driven Multimodal Movie Recommendation System | *Large Language Models, RAG, OpenAI* January 2024

- Architected a multimodal recommendation system to enhance movie discovery and recommendation experience for users.
- Enabled cross-modal search and recommendation capabilities by leveraging RAG to combine multimodal embeddings.
- Established vector search and multivector indexing using vectorized representations of text and image data.

### SearchXpert: Distributed Web Crawler and Search Engine | *Distributed Systems, NLP, Spark*

January 2024

- Constructed data ingestion pipeline using pySpark, Kafka and leveraged NLP for indexing and search engine development.
- Applied techniques like TF-IDF for ranking documents and orchestrated entire workflow with Airflow defining DAGs.
- Performed troubleshooting with logging, monitoring using Elasticsearch and Kibana.

### Foodie Palace: Restaurant Management Tool | *SQL, Python, Flask, JavaScript*

May 2023

- Created a responsive SaaS app for point of sale transactions, customer relationship management (CRM) operations.
- Designed complex MySQL relational database with CRUD operations and automated tasks using events, triggers.
- Orchestrated the seamless migration of the system to AWS cloud, leveraging services such as EC2, S3, RDS.

### Trader360 - Stock Portfolio Management | *Java, MVC, SOLID Principles* CODE

January 2023

- Developed a Java app by leveraging MVC for the backend architecture and integrating real-time data via RESTful APIs.
- Incorporated Object-Oriented Design (OOD) patterns, performed unit testing and conducted A/B testing for strategies.

## Education

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### Northeastern University

September 2022 – May 2024

*Master of Science in Computer Science*

*GPA: 4.0*

### Dayananda Sagar University

August 2018 – May 2022

*Bachelor of Science in Computer Science*

*GPA: 3.5*