

JAI PARAKH

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AI/ML FULLSTACK ENGINEER

AI/ML Full-Stack Engineer with 4+ years of experience building production SaaS platforms and ML-driven systems. Specialized in shipping multimodal AI pipelines for video and creative analysis, transforming unstructured media into scalable APIs and product insights across fintech, healthcare, and marketing domains. Strong background in microservices, performance optimization, and end-to-end delivery from research to real users. Currently pursuing an MSc in AI & ML at the University of Limerick.

TECHNICAL SKILLS

Languages: Javascript, Typescript, Python, C#

Databases: PostgreSQL, MongoDB, Redis Cloud, Firebase

AI/ML: Pandas, Numpy, DEAP, Pytorch, OpenCV, Scikit Learn

Backend: NodeJS, Express, Sockets, Puppeteer

Infrastructure: AWS (EC2, SNS, SQS, S3, Cognito), GCP

Frontend: React, NextJs, Material UI, Tailwind

PROFESSIONAL EXPERIENCE

Blkbox.ai November 2022 - June 2025
SDE - 2

- Built and scaled backend architecture for an AI-driven marketing platform processing 10M+ daily events from Facebook and TikTok APIs with 99.9% uptime.
- Shipped a multimodal AI pipeline to analyze ad videos, extracting themes, colors, objects, scenes, and hook/hold signals. Engineered video-to-frame Base64 ingestion for LLMs, enforced strict JSON schemas via prompt design and validation, and batch-processed hundreds of videos per run in production.
- Led and mentored 3 engineers through code review, performance review, and system design.
- Delivered multiple production features that reduced churn by 3% and server costs by 30% through system optimization and deployment improvements.
- Architected microservices and high-performance APIs, integrating algorithmic pipelines and AI services while optimizing latency, reliability, and test coverage.

5C Network June 2021 - October 2022
Backend Developer

- Architected and shipped a microservices-based backend for healthcare workflows using RESTful APIs, sockets, and AWS SQS, supporting high-throughput and real-time reporting systems.
- Optimized reporting pipelines and database design, reducing load times by 96% (10s → 0.36s) through schema redesign, indexing, and query optimization.
- Led backend development of Tata 1MG's Order Management System and built an intelligent auto-assignment algorithm using radiologist availability and modality constraints, reducing turnaround time (TAT) by 25% in production.

PROJECTS

Cocktail AI

- Built an AI cocktail design engine combining custom multi-label ML models with a Genetic Algorithm to evolve recipes from user-defined ingredients and flavor targets.
- Scraped and engineered a structured dataset of 4.5K cocktail recipes, normalizing 200+ ingredient features for ML-ready flavor prediction.
- Trained 9 taste classifiers achieving up to 0.99 AUC, integrating them as fitness functions for constrained evolutionary search.
- Engineered an optimization pipeline that selects and proportions ingredients, balancing flavor confidence with recipe simplicity under user constraints.
- Technologies:** Python, DEAP, Pandas, Scikit-Learn, Pickle, BeautifulSoup
- Link:** <https://parakhjs.me/projects/cocktail-ai>

Genetic Programming Classifier (Kaggle Competition)

- Architected a GP classifier from scratch for predicting income if the income is greater than \$50k.
- Applied various data pre-processing methods like scaling and encoding.
- Developed a multi-objective fitness function and various primitives to be used for the GP evolution.
- Result:** 4th place on leaderboard (78%+ accuracy)
- Technologies:** Python, DEAP, Pandas, Scikit-Learn
- Link:** <https://github.com/JaiParakh/GP-Classfier-Adult-Income-Dataset>

RapidMock

- RapidMock accelerates frontend development by mocking endpoints with real responses like 200, 404, 500, and many more.
- Developed, designed, and deployed the entire Frontend and Backend of the web application.
- Technologies:** NextJs, React, NodeJs, Javascript, Express, MongoDB, Render, and Vercel.
- Link:** <https://www.rapidmock.com/>

EDUCATION

MSc, Artificial Intelligence and Machine Learning
University of Limerick, Ireland (2025-2026)