

# Anand Saha

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*Hands-on technical leadership in AI Engineering*

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## Highlights

- **22+ years** of software engineering excellence with **8 years of deep expertise** in designing, developing, and productizing **applied AI solutions and products**.
- Proven track record of bootstrapping AI products from **0→1→10**, including **transforming legacy predictive stacks into modern AI Agent architectures** and **LLM-based e-commerce product enrichment systems**.
- Expertise in **agentic workflow design involving AI-Human collaboration**
- Strategic leadership experience **working directly with C-Suite executives** on roadmaps and planning
- **Leading high-impact initiatives** like onboarding a Fortune 5 customer at massive scale (50M products in 10 weeks) onto our enrichment platform, with high quality-bar.
- Architectural expert in **re-engineering backend systems for scale**, achieving up to 5x improvement in data ingestion and 3x in inferencing performance through microservice migrations.
- **Hands-on technical leader** proficient in ML Stack, with a background in building and scaling cross-functional teams across AI algorithms, serving, and data tooling.

## Skills

**Leadership:** Vision and strategy, mentorship and coaching, cross-functional collaboration, project management, stakeholder management, technical guidance

**AI & Engineering Ecosystem:** Machine Learning, AI Engineering, Prompt/Context Engineering, AI Agent design, RAG, Serving at scale, Large Language Model usage, Embeddings, OpenAI GPT, Google Gemini, Claude

**Tech Stack:** Python, C/C++, PyTorch, Docker, Kubernetes, Ray Serve, Vector DBs, LangChain, LangGraph, GPU based hardware setup.

**Others:** Micro Services, Databases, Distributed Systems, Virtualization, Cloud

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## Experience

### Lily AI (4 years, 10 months - current)

**Sr. Dir of ML Engineering**

June'24-Current

**Director of ML Engineering**

Feb'22-June'24

**ML Engineering Manager**

Apr'21-Jan'22

- **Architectural Transformation:** Pivoted the company's core AI technology (e-commerce product attribution) from legacy predictive modeling (vision transformer based) to a modern AI Agent architecture (AI Agents + RAG).
- **SEO / GEO Leadership:** Engineered a semantic keyword optimization algorithm that boosted search visibility and citation probability across traditional search and AI-driven generative engines.

- **Generative AI Productization:** Led the 0→1→10 development of LLM-based algorithms for PDP and meta-copy (SEO) generation, establishing a robust customer pipeline.
- **Strategic Execution:** Scaled a cross-functional AI team accountable for the full lifecycle of algorithms, serving, data, and tooling to meet the company's product roadmap.
- **Massive-Scale Onboarding:** Directed the onboarding of a Fortune 5 customer, successfully processing 50 million products in 10 weeks with >80% precision.
- **Performance Engineering:** Led a migration from a Ruby monolith to a Java microservice architecture, resulting in a 5x increase in data ingestion and 3x improvement in inference speed.
- **Data Strategy:** Designed a centralized "Source of Truth" for the entire business control plane, mitigating critical data integrity risks and boosting organization-wide productivity.
- **Team Leadership:** Hired and coached a strong team of 8 ML Engineering and Science talent at peak.

## Cogent Labs (2 years 7 months)

**Sr. Machine Learning Engineering Manager**

Aug'19-Mar'21

**Sr. Machine Learning Engineer**

Sep'18-Jul'19

- **Team Leadership & Scaling:** Directed a cross-functional team of 5 ML engineers and 4 data specialists to maintain production deep learning models and high-integrity data systems. Successfully scaled the team by recruiting and onboarding top-tier ML talent.
- **Strategic Architecture:** Served as the principal architect for OCR (Computer Vision) initiatives, designing and launching a high-security digitization system for a tier-1 banking client.
- **Complex Problem Solving:** Engineered a robust solution to process 40 years of legacy printed stock data across 100+ noisy and misaligned templates, significantly improving data accessibility for financial reporting.
- **Cross-Functional Alignment:** Partnered with Product Management and Research to bridge the gap between theoretical prototypes and production-ready engineering roadmaps, ensuring alignment with market requirements.
- **Operational Excellence:** Established best practices for code reviews, data security protocols, and ML infrastructure procurement, reducing technical debt and improving engineering hygiene.
- **Core CV Development:** Developed advanced OCR and text detection algorithms, specializing in high-accuracy document processing and edge-optimized security solutions.
- **Data Strategy:** Designed efficient data formats and management pipelines to streamline the training lifecycle for deep learning models.

## CONSULTING (10 months)

**AI Research & Engineering**

Apr'17 - Jan-'18

I focused on consulting for startups, research paper study & implementation, effective ways to train models, setting up hardware for deep learning training, solving use cases using computer vision, reinforcement learning, and NLP, taking online courses, sharing technical insights via my blog, contributing to open source, etc.

**Lily.AI**

Apr'18-Aug'18

AI Engineer (Consultant): Architected deep learning and computer vision based solutions for automated apparel feature extraction for search and personalized recommendation engines.

**Packt**

Jan'18-Apr'18

Authored and developed the professional course "Deep Learning with PyTorch," establishing thought leadership in emerging ML frameworks. (<http://bit.ly/dl-pytorch-course>)

#### **FLYTBASE**

Jun'17 - Sep'17

AI Engineer (Consultant): Created an image processing pipeline to extract information from high-resolution aerial images, catering to use cases like object detection and counting, in domains like wildlife conservation and inventory management. (<http://bit.ly/oryx-detection>).

Also worked on an algorithm to detect changes between two images using traditional vision techniques.

### **VERITAS TECHNOLOGIES LLC (Cont. after SYMANTEC/VERITAS split) (1 year 6 months)**

#### **Principal Software Engineer**

Oct'15 - Mar'17

Worked on the cloud stack of NetBackup for data backups to cloud platforms like AWS and OpenStack. Developed tools to certify new cloud providers for operability with NetBackup.

Served as tech lead of the team to coordinate feature engineering activities with product owners, architects, and leadership.

### **SYMANTEC (3 years 7 months)**

#### **Principal Software Engineer**

Mar'12 - Sep'15

Tech Lead: designed and implemented various enterprise features of NetBackup, including SharePoint protection, virtualized assets protection, etc. I have mostly worked with C++ and the system stack (OS, Networking, Storage, Cloud, Databases).

### **TATA COMMUNICATIONS (4 years 6 months)**

#### **Senior Software Engineer**

Sep'07 - Feb'12

Developed and maintained TATA Communications's machine learning-based system to predict voice traffic patterns using linear regression. The system generates optimized dial plans for the upcoming hour, having a direct impact on revenue.

### **GAVS TECHNOLOGIES (4 years 4 months)**

#### **Software Engineer**

May'03 - Aug'07

Implemented various bespoke projects spanning technologies like C/C++, .NET, WiMax, and Symbian OS. In addition to software development, I wrote tech proposals, presented solutions to customers, and managed teams.

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## **Education**

### **National Institute of Technology, Tiruchirappalli**

1999 - 2003

BE, Instrumentation and Control Engineering

### **Indian Institute of Sciences (IISc), Bangalore**

Summer of 2002

I did my 3rd-year summer project here studying scheduling in Real-Time Operating Systems.

### **Indian Institute of Technology (IIT), Bombay**

Summer of 2001

I did my 2nd year summer project here, working on FPGA implementation of a Network Interface Controller for Network Printer.