

Aditya Pethe

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Experience

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- Instagram** – Data Scientist on Instagram Reels Monetization (SQL, Python, Claude Code) Sep 2023 – May 2026
- Led experimentation, strategy, and data narratives across keystone Reels monetization initiatives (post-roll ads, autoscroll, 2x playback) reaching **1.3B+ DAU**, contributing to >1% incremental Reels revenue (~\$100M+ ARR)
 - Shaped org-level monetization strategy by identifying that >50% of Reels sessions remained unmonetized through deep-dive behavioral analysis; resulted in prioritization of a year-long post-roll ads initiative with leadership
 - Consistently **unblocked launches** across Ads Ranking, Organic, and Quality stakeholder teams by conducting high-rigor investigations across calibration, user behavior, delivery, and engagement tradeoffs under tight timelines
 - Developed a suite of **Claude Skills** to automate experiment readouts for 10+ experiments, reducing analysis turnaround time by ~10x and enabling 30+ engineers and cross-functional partners to self-serve core data investigations
 - Influenced monetization roadmaps and ranking strategy through behavioral modeling, **LLM-based content annotation**, and organic ranking signals, including contextual ad targeting (**+30% CTR**), screenshot quality understanding, and lightweight shallow-session prediction systems
- Amazon** – Software Engineering Intern (Java) Sep 2022 – Dec 2022
- **Amazon DevOps Guru** using ML for anomaly detection in application metrics to prevent operational issues
 - Designed, developed, and shipped a **CloudFormation** resource (schema and handlers) in **Java** to extend DevOps Guru
- Instagram** – Data Science Intern Jun 2022 – Sep 2022
- Improved reciprocal conversation proxies F1 scores **+13%** for story reshares, and **+50%** for story replies
 - Analogous offline performance resulted in **+0.13% communications DAU**, received **GE (Greatly Exceeds, <10% interns)**
- Alexa Prize Challenge** – Research Developer May 2021 – Apr 2022
- **Coauthored & Published technical paper** in **Amazon Science** while developing a **conversational taskbot**
 - Boosted ratings **+10%** via smart user recommendations, implemented step navigation and transcript generation
- SmugMug & Flickr Inc** – Data Science Intern Jun 2021 – Aug 2021
- Lead independent project to predict subscribers from free trial user data, presented at company-wide all hands
 - Improved model recall **+20% by** leveraging various techniques (**PCA, TSNE, NN, XGBOOST**)

Education

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- Texas A&M University** B.S in Computer Science, B.S in Applied Mathematics Aug 2018 – May 2022
- Magna Cum Laude – Brockman Scholar – US Presidential Scholarship Candidate – Grace Hopper Scholar
- Relevant Coursework:** Abstract Algebra, Real Analysis, Recommender Systems, Machine Learning, Algorithms

Skills

Languages: Python3, SQL, Java, C++, Typescript, JavaScript, R

Frameworks & Technologies: Pandas, PyTorch, Scikit-learn, FastAPI, React, Node.js, Next.js, AWS (CloudFormation, Lambda, S3)

AI & Data: Claude Code, Skills & MCPs (Model Context Protocol), LangChain, experimentation, causal inference, product analytics

Projects

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- Conifer** at Pinecone Jun 2023 – Jul 2023
- Developed conifer, a **full-stack** youtube semantic search app using **next.js** and **react.js**: github.com/aditya-pethe/conifer
 - Created a vector database of youtube transcripts in **pinecone**, and a real time streaming chatbot in **FastAPI** and **OpenAI**
 - Fully managed authentication flow with **clerk**, and a userDB with **convex** - deployed with **Vercel** serverless functions
- Open Source Developer** at Langchain April 2023 – Aug 2023
- Contributed pull requests to **langchain (40K stars)**, creating and testing natural language wrappers for **power bi** api
 - Created **UI-chat**, a language-to-website tool in **typescript**, **react.js** and **langchain.js**: github.com/aditya-pethe/ui-chat
 - Developed **chat gpt plugin** for question answering over documents using vector databases (**pinecone**)
- Texas A&M Datathon** – President Nov 2019 – Dec 2021
- **Led a team of 20** and organized Texas A&M's flagship data science hackathon with over **400** participants
 - **Raised \$55,000** from sponsors and hosted the first hackathon ever at the Hall of Champions in **Kyle Field**