Case Study: Improving Customer Support with an AI Chatbot

Overview

A mid-sized SaaS company struggled with handling repetitive customer support queries. They implemented a **GPT-based AI chatbot** to automate responses and assist the support team.

Problem Statement

Support tickets were increasing by 40% monthly, leading to delayed responses and reduced customer satisfaction.

Approach

The team used a **fine-tuned GPT-3.5 model** trained on 10,000 anonymised chat transcripts.
Data was cleaned using Python scripts and labelled by internal support specialists.
The model was deployed via an **AWS Lambda API** connected to the company's helpdesk system (Zendesk).

Implementation Details

- **Framework:** Python (FastAPI)
- **Model:** OpenAI GPT-3.5 Turbo
- **Infrastructure:** AWS Lambda + DynamoDB
- **Integration:** Zendesk API
- **Monitoring:** Grafana dashboards for message latency and accuracy

Results

Metric	Before	After	Improvement
Avg. response time	2m 30s	15s	90% faster
Customer satisfaction (CSAT)	76%	91%	+15%
Support workload	100%	55%	45% reduction

Lessons Learned

- Always **use anonymised** support data for fine-tuning.
- Regularly **retrain** the model to adapt to new FAQs.
- Implement a **fallback system** where humans can take over.

Conclusion

The chatbot transformed customer support efficiency and morale.
Future plans include multi-language support using GPT-4 and integration with voice assistants.