



PYSELLERS AI FAST-TRACK · BATCH 6 · NEW 2026 YEAR-END SYLLABUS

Applied AI & Generative AI

From AI Fundamentals to LLMs, RAG, AI Agents & Deployment

Learn · Build · Deploy · Get Hired

AI is now part of every job. This new two-month programme takes you from zero to building and deploying real AI applications — the same LLM, RAG and agent skills companies are hiring for today. One focused hour a day, 100% online, built around hands-on projects, taught by mentors who ship AI products for clients.

Duration	2 months · 40 live sessions · 40 hours
Schedule	1 hour/day · Monday to Friday · Morning & late-evening batches
Mode	100% online · live sessions on Microsoft Teams · hands-on, explained in English & Tamil
Fee	₹3,999 + GST per month (₹7,998 + GST for the full programme)
Batch starts	2 November 2026
Student support	24/7 WhatsApp support group · API keys & AI tool access for every student
Progress tracking	Attendance, materials, session recordings, exercises & projects on PySellers' HRMS Training Tracker
Certification	Course Completion Certificate from PySellers Services Pvt. Ltd.

Certificate

Course completion certificate issued by PySellers Services Pvt. Ltd., an ISO certified company registered under the NIC code for training services.

Internship

Top performers are offered an internship on live PySellers AI products and client projects.

Career path

Outstanding interns get the chance to join PySellers as a Software Engineer.

What's new in Batch 6

Our earlier AI/ML Fast-Track (3 months) has already certified 40+ learners across five batches. Batch 6 is rebuilt for the 2026 job market:

- **Generative AI first:** LLMs, prompt engineering, RAG and AI agents now make up half the course.
- **The tools teams actually use:** Claude, ChatGPT, Gemini, open models via Ollama, LangGraph, MCP, n8n.
- **AI-assisted coding:** work productively with Claude Code, Cursor, GitHub Copilot and Codex — and review what they write.
- **Vision AI:** image and video processing with Vision Transformers (ViT), CLIP and YOLO.
- **Industry practices:** cloud fundamentals, CI/CD pipelines with GitHub Actions, and Agile/Scrum teamwork — the capstone runs as real sprints.
- **Deploy, don't just demo:** every learner puts an AI app live on the cloud with a public link.
- **Fully online and supported:** live Microsoft Teams sessions, a 24/7 WhatsApp support group, and API keys and AI tool access for every student.
- **Fundamentals kept:** Python, data handling, machine learning and deep learning — compressed to what you need.



Programme at a glance

Week	Theme	Key tools	Outcome
1	AI Foundations & Python for AI	Python, Colab, NumPy, Pandas, Matplotlib	EDA notebook on a real dataset
2	Machine Learning Fundamentals	scikit-learn	Mini Project 1: Customer churn / segmentation
3	Deep Learning, Vision & NLP	PyTorch, Hugging Face, ViT	ViT image classifier + sentiment pipeline
4	LLMs & Prompt Engineering	Claude, ChatGPT, Gemini APIs, Ollama, Streamlit	Mini Project 2: AI document / resume analyser
5	Retrieval-Augmented Generation (RAG)	LangChain, LlamaIndex, ChromaDB, pgvector	Mini Project 3: Knowledge-base chatbot
6	AI Agents, MCP & Automation	LangGraph, Agent SDKs, MCP, n8n	Mini Project 4: Automation agent
7	Vision AI, Cloud, CI/CD & Agile	Claude Code, CLIP, YOLO, Docker, GitHub Actions, Cloud Run, Jira	AI app live with CI/CD auto-deploy
8	Capstone (Agile sprints) & Career	Langfuse / LangSmith, GitHub, Jira	Capstone demo · Certificate · Internship selection

Who can join

- College students (any degree) and fresh graduates
- Working professionals moving into AI, and job seekers
- Business owners who want to automate work with AI

Prerequisites: none beyond basic computer use — Python is taught from scratch. Bring a laptop (8 GB RAM recommended) with internet and a Google account. PySellers provides API keys and AI tool access to every student, so no paid AI subscription is required.

Day-wise syllabus · 40 sessions × 1 hour

Day	Topic	Hands-on lab / output
Week 1 — AI Foundations & Python for AI		
1	The AI landscape in 2026: AI vs ML vs DL vs GenAI vs Agents; real use cases and AI career roles	Onboarding: MS Teams, HRMS Training Tracker & WhatsApp group; set up Colab, VS Code, GitHub
2	Python essentials I: variables, data types, strings, lists, dictionaries, loops, conditions	Coding drills with an AI pair-programmer (and how to check its answers)
3	Python essentials II: functions, files, JSON, error handling, modules, pip & virtual environments	Read CSV/JSON files and call a public web API
4	Data handling with NumPy & Pandas: selecting, filtering, grouping, cleaning missing data	Clean and summarise a real sales dataset
5	Visualisation & EDA with Matplotlib/Seaborn; statistics essentials (mean, variance, distributions, correlation)	EDA notebook · Week 1 quiz
Week 2 — Machine Learning Fundamentals		
6	How machines learn: features, labels, train/test split, overfitting vs underfitting, bias–variance	First scikit-learn model end to end

Day	Topic	Hands-on lab / output
7	Regression: linear, multiple, Ridge/Lasso regularisation	House-price prediction
8	Classification: logistic regression, decision trees, random forest, gradient boosting	Customer churn classifier
9	Model evaluation: accuracy, precision, recall, F1, confusion matrix, ROC-AUC, cross-validation, tuning	GridSearchCV tuning & metric comparison
10	Unsupervised learning: k-means clustering, PCA; scikit-learn pipelines	Mini Project 1: Customer segmentation / churn predictor
Week 3 — Deep Learning, Computer Vision & NLP		
11	Neural networks: perceptron, activations, loss, gradient descent, backpropagation	Build a neural network in PyTorch
12	Training deep networks: optimisers, batching, GPUs, dropout, early stopping	Train an MNIST digit classifier on a free Colab GPU
13	Computer vision: CNNs, Vision Transformers (ViT) and transfer learning	Fine-tune a pretrained ViT on your own images
14	NLP foundations: tokenisation, word & sentence embeddings, semantic similarity	Semantic search over FAQs with sentence-transformers
15	Transformers & self-attention; Hugging Face Hub, models, datasets and pipelines	Sentiment, summarisation & translation pipelines · Week 3 quiz
Week 4 — Large Language Models & Prompt Engineering		
16	How LLMs work: pre-training, instruction tuning, RLHF, tokens, context windows, reasoning models, hallucinations	Token counting and side-by-side model comparison
17	Model landscape: Claude, GPT, Gemini vs open models (Llama, Qwen, DeepSeek, Gemma); cost, speed & quality trade-offs	Run an open model locally with Ollama
18	Prompt engineering: zero/few-shot, roles, step-by-step reasoning, system prompts, prompt templates	Prompt lab with a scoring sheet
19	LLM APIs in Python: messages, streaming, structured JSON output, function calling	Build a command-line AI assistant
20	Building AI web apps with Streamlit / Gradio	Mini Project 2: AI document / resume analyser web app
Week 5 — Retrieval-Augmented Generation (RAG)		
21	Why RAG; embeddings and vector databases (ChromaDB, pgvector, FAISS)	Index a document set into ChromaDB
22	Ingestion: loading PDFs, web pages & tables; chunking strategies; metadata	Build a reusable ingestion pipeline
23	Retrieval + generation with LangChain / LlamaIndex; answers with source citations	"Chat with your PDF" bot
24	Advanced RAG: hybrid search, re-ranking, query rewriting, conversation memory	Improve the bot's accuracy and measure the gain
25	Evaluating LLM apps: test sets, faithfulness, relevance, LLM-as-judge (Ragas)	Mini Project 3: Company knowledge-base chatbot
Week 6 — AI Agents, MCP & Automation		
26	From chatbots to agents: tool use, the reason-act-observe loop, planning and memory	Agent with calculator, web-search and database tools

Day	Topic	Hands-on lab / output
27	Agent frameworks: LangGraph, OpenAI Agents SDK, Claude Agent SDK, CrewAI — when to use which	Stateful multi-step agent in LangGraph
28	Model Context Protocol (MCP): connecting AI to files, databases and business APIs	Write your own MCP server for a SQLite database
29	Multi-agent systems, human-in-the-loop approval and guardrails	Researcher + writer agent team
30	Low-code AI automation with n8n: email, WhatsApp, Google Sheets workflows	Mini Project 4: Lead / email responder automation agent
Week 7 — AI Engineering, Vision AI, Cloud & CI/CD		
31	AI-assisted software development with Claude Code, Cursor, GitHub Copilot & Codex; reviewing AI-written code	Ship a feature using an AI coding agent
32	Git & GitHub workflow; Agile & Scrum in practice (user stories, sprints, stand-ups, Jira boards); FastAPI back-ends	Plan work on a Jira board · expose your RAG bot as a REST API
33	Cloud fundamentals (GCP / AWS / Azure: compute, storage, IAM), Docker, CI/CD pipelines with GitHub Actions; API keys & secrets	Auto-deploy your app to Cloud Run on every git push
34	Vision AI: CLIP for image search & zero-shot classification, video processing (frame sampling, YOLO detection & tracking), vision-language models, speech-to-text (Whisper)	Image search engine with CLIP + video analytics demo
35	Fine-tuning vs prompting vs RAG; LoRA/QLoRA overview; Responsible AI: bias, privacy, safety, cost, India's DPDP Act	Small fine-tuning demo on Colab · Capstone proposal
Week 8 — Capstone & Career Readiness		
36	Capstone kick-off run as an Agile sprint: problem statement, backlog, user stories, architecture	Sprint planning & architecture review with mentor
37	Capstone build sprint I	Data and core AI pipeline
38	Capstone build sprint II; LLMops: logging, tracing & monitoring (Langfuse / LangSmith)	UI, API and deployment
39	Career readiness: GitHub portfolio, AI-focused resume & LinkedIn, interview Q&A	Mock technical interview
40	Demo Day: capstone presentations and final assessment	Live demo · Certificates · Internship selection

Projects you will build

- **Mini Project 1** — Customer churn predictor / segmentation (machine learning)
- **Mini Project 2** — AI document & resume analyser web app (LLM APIs + Streamlit)
- **Mini Project 3** — Company knowledge-base chatbot with citations (RAG)
- **Mini Project 4** — Lead / email responder automation agent (agents + n8n)
- **Capstone** — an end-to-end AI product built in Agile sprints and shipped through a CI/CD pipeline: data → model/LLM → API → UI → cloud. Sample themes: customer-support agent for a small business, English/Tamil document Q&A, invoice and sales analyser, CCTV/video analytics, voice assistant, product-review analyser.

Tools & technologies

Programming & data	Python, Google Colab, Jupyter, NumPy, Pandas, Matplotlib, Seaborn
Machine & deep learning	scikit-learn, PyTorch, Hugging Face Transformers
LLMs	Claude, ChatGPT, Gemini APIs · Llama, Qwen, DeepSeek, Gemma via Ollama



RAG & agents	LangChain, LangGraph, LlamaIndex, ChromaDB, pgvector, MCP, CrewAI, n8n
Vision AI	Vision Transformers (ViT), CLIP, YOLO, OpenCV, Whisper
AI coding tools	Claude Code, Cursor, GitHub Copilot, OpenAI Codex
Cloud, CI/CD & Agile	Streamlit, Gradio, FastAPI, Git/GitHub, GitHub Actions, Docker, Google Cloud Run, Langfuse, Jira

Assessment, certificate & internship

- **Assessment:** weekly quizzes, 4 mini projects and a capstone presented on Demo Day.
- **Certificate:** Course Completion Certificate from PySellers Services Pvt. Ltd. for learners with at least 80% attendance and a submitted capstone.
- **Internship:** top performers are selected for an internship with PySellers, working on live AI products and client projects.
- **Software Engineer opportunity:** outstanding interns are considered for a Software Engineer role at PySellers.
- **Progress tracking:** attendance, course materials, live-session recordings, exercises and projects are tracked on PySellers' own HRMS Training Tracker.
- **Portfolio:** every learner leaves with a GitHub portfolio of 5 projects and at least one live deployed app.

Your mentors

- 20+ years of IT industry experience
- Doctorate and Master's degree holders in AI
- Experienced in delivering training and project support for universities, institutes and corporates

Register now — limited seats for Batch 6

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Fee: ₹3,999 + GST per month · Batch starts 2 November 2026 · Special discounts for groups and early registrations — ask us. Group and corporate batches available for universities, institutes and companies.