SUPPORT ME
— BY THE DEVELOPERS' GROUP

PROFESSIONAL PROGRAM

Where trainees meet real Support

FLAGSHIP COURSE OUTLINE

Forward Deployed Engineer

AI Engineering • Full-Stack Development • Enterprise Integration • Cloud Deployment

From business problem discovery to production-ready AI solutions.

12	60	5	120
WEEKS	LECTURES	LECTURES / WEEK	TEACHING HOURS

COURSE LEVEL
Beginner-to-intermediate, for learners with basic programming knowledge

DELIVERY
Live online, instructor-led · 2-hour sessions

LANGUAGES
Python + JavaScript / TypeScript

OUTCOME
A deployed, client-ready AI business solution

Engineering that starts with the customer

A Forward Deployed Engineer (FDE) works directly with customers to understand a business problem, design the solution, build it across the full stack, wire in AI, and ship it to production. This 12-week program trains exactly that combination — technical depth plus the consulting skills to apply it in real client environments.

> **Who it's for:** learners with basic programming knowledge. Python and TypeScript are taught together from first principles, and starting points are adapted to each learner's background.

Who Can Attend?

01

Students & Recent Graduates

Computer science and engineering graduates who want an industry-ready, customer-facing engineering role.

02

Software Developers

Frontend, backend or full-stack developers who want to add AI, integration and deployment skills.

03

QA, Support & Implementation Engineers

Professionals already close to customers who want to build and deliver solutions, not just support them.

04

Solution Consultants & Tech Professionals

Pre-sales, solution and IT professionals moving into hands-on AI engineering and delivery.

What Makes an FDE Different?

Full-Stack Engineer

Builds applications from requirements handed to them.

AI Engineer

Builds models, LLM features and AI pipelines.

Forward Deployed Engineer

Discovers the problem with the client, then builds, integrates, deploys and demonstrates the full solution.

Six themes, one complete journey

THEME 1 **Weeks 1–2**	**Engineering & Solution Foundations**	FDE role, requirement discovery, SDLC, system architecture, APIs and database design.
THEME 2 **Weeks 3–4**	**Full-Stack & Integration Engineering**	TypeScript, React/Next.js, Node.js, databases, authentication, enterprise APIs and webhooks.
THEME 3 **Weeks 5–7**	**AI & Generative AI Engineering**	Python for AI services, LLM APIs, prompt engineering, RAG, AI agents and MCP.
THEME 4 **Weeks 8–9**	**Cloud, Deployment & Production Engineering**	AWS, Docker, CI/CD, monitoring, AI evaluation, guardrails, security and cost control.
THEME 5 **Week 10**	**Customer-Facing Engineering & Consulting**	Discovery workshops, proposals, estimation, trade-offs and stakeholder communication.
THEME 6 **Weeks 11–12**	**Industry Capstone & Implementation**	Build, deploy, document and defend a production-ready enterprise AI solution.

Program Highlights

Career-oriented design

Modelled on how FDEs actually work in AI companies and enterprise delivery teams.

End-to-end scope

From client discovery to a monitored production deployment — nothing left half-built.

Hands-on methodology

Every lecture includes a lab; every week ends with a practical assignment.

Practical final four weeks

Weeks 9–12 are heavily project-driven, ending in a portfolio-grade capstone.

Flexible learning path: the six core themes stay constant, while depth, exercises and the capstone scope are adjusted to each learner's background and pace.

Foundations, Full-Stack & Integration

Theme 1 · Engineering & Solution Foundations

WEEKS 1–2 · 10 LECTURES

WEEK 1 Introduction to Forward Deployed Engineering

1. Introduction to FDE and its role in modern engineering
2. FDE vs Full-Stack Engineer vs AI Engineer
3. Understanding business problems and customer requirements
4. Requirement gathering, discovery and technical documentation
5. Converting business requirements into technical solutions

Assignment: Analyze a business problem and prepare a technical solution proposal.

WEEK 2 Software Engineering & System Architecture

1. Software development lifecycle and engineering workflows (Git & GitHub)
2. Frontend and backend architecture fundamentals
3. REST APIs, HTTP methods and API integrations
4. Database design – SQL and NoSQL fundamentals
5. System architecture, data flow and technical documentation

Assignment: Design a complete architecture for a customer-facing business application.

Theme 2 · Full-Stack & Integration Engineering

WEEKS 3–4 · 10 LECTURES

WEEK 3 Full-Stack Application Development

1. JavaScript and TypeScript fundamentals for application development
2. React and Next.js application development
3. Backend development using Node.js and Express
4. Database integration using MongoDB and PostgreSQL
5. Authentication, authorization and application security fundamentals

Mini Project 1: Build a full-stack customer management application.

WEEK 4 Enterprise APIs & System Integration

1. REST API development and integration
2. Third-party API integration and authentication (API keys, OAuth)
3. Webhooks and event-driven architecture
4. Integrating CRM, ERP and external business systems
5. API testing, debugging and integration error handling

Assignment: Integrate a CRM-style application with external services and APIs.

AI & Generative AI Engineering

Theme 3 · AI & Generative AI Engineering

WEEKS 5–7 · 15 LECTURES

WEEK 5 Python for AI Engineering

1. Python fundamentals and development environment
2. Functions, modules, packages and exception handling
3. Working with JSON, files and external APIs
4. Data processing and integration using Python
5. Building Python backend services with FastAPI

Assignment: Develop a Python service that consumes and processes external API data.

WEEK 6 Generative AI & LLM Application Development

1. Introduction to Generative AI and Large Language Models
2. Tokens, context windows and model parameters
3. Prompt engineering and structured outputs
4. LLM API integration and function / tool calling
5. Building AI-powered applications using LLM APIs

Mini Project 2: Develop an AI-powered business assistant.

WEEK 7 RAG, AI Agents & MCP

1. Embeddings and vector databases
2. Retrieval-Augmented Generation (RAG) architecture
3. Document ingestion, chunking and semantic search
4. AI agents, tools and multi-step workflows (LangGraph)
5. Model Context Protocol (MCP) and external tool integration

Assignment: Develop a document-based AI assistant with RAG and external tool access.

Theme 4 · Cloud, Deployment & Production

WEEKS 8–9 · 10 LECTURES

WEEK 8 Cloud Infrastructure & DevOps

1. Cloud computing fundamentals and AWS architecture
2. AWS EC2, S3, IAM and Lambda fundamentals
3. Docker and containerization
4. CI/CD using GitHub Actions or GitLab CI
5. Deploying full-stack and AI applications to AWS

Assignment: Containerize and deploy an AI application on AWS.

Production, Consulting & Capstone

WEEK 9 — Production Readiness & Reliability

1. Production architecture and environment management
2. Logging, monitoring and error tracking (CloudWatch)
3. API performance and database optimization
4. AI evaluation, guardrails and output validation
5. Security, privacy, scalability and AI cost optimization

> **Mini Project 3:** Make a deployed application production-ready with monitoring and error handling.

Theme 5 · Customer-Facing Engineering & Consulting

WEEK 10 · 5 LECTURES

WEEK 10 — Client Problem Solving & Technical Consulting

1. Conducting customer discovery and requirement workshops
2. Identifying business workflows and automation opportunities
3. Preparing technical proposals and solution architecture
4. Estimation, project planning and technical trade-offs
5. Client communication, product demos and stakeholder management

> **Assignment:** Conduct a simulated client discovery session and present a technical proposal.

Theme 6 · Industry Capstone & Implementation

WEEKS 11–12 · 10 LECTURES

WEEK 11 — Enterprise AI Solution Development

1. Selecting a real-world business problem
2. Requirement analysis and solution architecture
3. Building the frontend and backend application
4. Integrating AI, RAG, APIs and business workflows
5. Testing, debugging and deployment preparation

> **Assignment:** Build the first complete version of an enterprise AI application.

WEEK 12 — Production Deployment & Capstone Presentation

1. Production deployment and infrastructure configuration
2. Integration testing and performance validation
3. Monitoring, documentation and project handover
4. Preparing technical demonstrations and project presentations
5. Capstone evaluation, architecture defence and feedback

> **Final deliverable:** A working, deployed AI business solution with source code, documentation and a live demo.

A focused, industry-standard stack

Category	Technologies
Programming	Python, JavaScript, TypeScript
Frontend	React, Next.js
Backend	Node.js, Express, FastAPI
Database	PostgreSQL, MongoDB
AI & LLM	OpenAI API, Hugging Face
AI frameworks	LangChain, LangGraph
AI architecture	RAG, embeddings, vector databases, MCP
Cloud	AWS EC2, S3, Lambda, IAM
DevOps	Git, Docker, GitHub Actions / GitLab CI
Monitoring & Testing	CloudWatch, application logging, Postman, integration testing

> Tools are taught through practical use cases rather than an exhaustive survey — depth over breadth, so learners leave confident rather than overwhelmed.

Capstone Project Options

Each learner completes one major, client-style project — not a set of disconnected tutorials.

PROJECT A

Enterprise AI Support Platform

- Knowledge-base RAG
- Customer query management
- AI response generation
- Ticketing system integration
- AWS deployment

PROJECT B

AI Sales & CRM Automation

- Lead management
- Lead qualification
- AI-generated summaries
- Workflow automation
- CRM API integration

PROJECT C

AI Document Intelligence Platform

- Document upload
- Data extraction
- RAG-based document search
- AI-generated reports
- Secure deployment

Outcomes & assessment

Learning Outcomes

- Analyze real-world business requirements
- Design full-stack application architectures
- Build and integrate AI-powered applications
- Develop RAG systems and AI agent workflows
- Connect enterprise APIs and business systems
- Deploy applications using AWS and Docker
- Configure CI/CD pipelines and monitoring
- Troubleshoot application and integration issues
- Communicate solutions to business stakeholders
- Deliver and demo production-ready solutions

Capstone Deliverables

- Client problem statement & requirement document
- Solution architecture diagram
- Full-stack application with AI integration
- Live AWS deployment with CI/CD
- Monitoring, guardrails & evaluation report
- GitHub repository & technical documentation
- Mentor-guided live demo & architecture defence

Training Structure

Activity	Allocation
Instructor-led training	60 live lectures (2 hours each)
Hands-on coding labs	Integrated into every lecture
Weekly assignments	10
Mini projects	3 (Weeks 3, 6 and 9)
Technical assessments	2 (after Week 5 and Week 9)
Major capstone & presentation	1 (Weeks 11–12)

Evaluation



WHY CHOOSE THIS COURSE?

Built for real client delivery

Live instructor-led sessions

Interactive classes with real-time doubt solving and code reviews.

Application-first teaching

Every concept is applied to a working feature the same day.

Business-value perspective

Learn to tie every technical decision to a customer outcome.

Personalized mentoring

Small batches of 10–15 learners for individual attention.

Portfolio & career support

Deployed capstone, GitHub portfolio and interview preparation.

Clear progression path

A natural next step after *AI with Python*.

How It Builds on AI with Python

AI with Python	Forward Deployed Engineer
Python programming	Full-stack engineering (Python + TypeScript)
Data analysis & ML fundamentals	Business problem solving & enterprise AI integration
LLM fundamentals	AI agents, RAG and MCP
Basic app deployment	Production cloud deployment with CI/CD & monitoring
AI capstone	Client-oriented enterprise capstone

GENERAL TRAINER PROFILE

- ✔ 20+ years of technology leadership across enterprise software delivery
- ✔ Hands-on experience building enterprise AI and Generative AI solutions
- ✔ Cross-functional background spanning engineering, cloud, QA and client consulting
- ✔ Proven track record of training engineers and career switchers
- ✔ Interactive, practical and mentoring-focused teaching style

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