

Agentic Software Engineering using GitHub Copilot (GHAGENTS)

ID GHAGENTS Price 1,990.— €(excl. tax) Duration 3 days

Course Overview

Embark on a transformative three-day journey into agentic software engineering with GitHub Copilot, where you will discover how to harness AI-powered tools to revolutionize your coding productivity and architectural decision-making. Whether you are a software engineer seeking to amplify your capabilities, a solution architect exploring the future of AI-assisted development, or a technical leader evaluating how AI agents enhance team workflows, this course equips you with the knowledge and hands-on experience to leverage AI effectively in modern software development.

Your learning adventure begins with GitHub Copilot Fundamentals, where you will establish a solid foundation by setting up GitHub Codespaces and development containers for seamless, reproducible environments. You will master AI-assisted coding through inline suggestions, slash commands, context variables, and code review integration on pull requests. You will also explore agent controls, including auto-approval slash commands (`/autoApprove`, `/yolo`) and their security implications. By learning how Copilot integrates into your daily workflow, you will be prepared to unlock its full potential and understand the principles underlying effective AI collaboration.

The journey continues as you explore GitHub Copilot Artifacts and Tools, a pivotal module focused on extending Copilot's capabilities through instructions, prompt files, and the Model Context Protocol. This module introduces custom agents, agent skills, and Copilot memory, empowering you to create intelligent, personalized coding assistants tailored to your specific needs. You will also learn how to shape Copilot's context window strategically with context compaction and session forking, leverage GitHub Copilot Hooks, install prepackaged agent plugins, troubleshoot agents using the Agent Debug Panel, and generate customization files directly from chat conversations.

A major focus is placed on Implementing Agentic Coding, where you will transition from simply using Copilot to building sophisticated agentic solutions that solve real problems. You will

explore local agents and agent mode for real-time assistance, delegate complex tasks to cloud-based agents, and leverage background agents for asynchronous workloads. The module progresses to multi-agent orchestration, teaching you how to coordinate multiple intelligences to tackle intricate challenges, and culminates with hands-on experience using Anthropic Claude Code Agents for advanced code generation and analysis. You will also explore agentic browser automation, enabling agents to drive the integrated browser and verify their own web app changes in real time.

As your expertise deepens, you will discover GitHub Copilot CLI, SDK, and Advanced Topics, where command-line interfaces and programmable SDKs unlock new dimensions of automation and integration. This module presents real-world business cases, such as HR document update automation, demonstrating how agents solve practical challenges beyond traditional coding. You will explore agentic workflows, implement GitHub Copilot SDK solutions, and integrate MCP applications into your development pipeline to build enterprise-grade solutions.

Your technical progression reaches infrastructure and operations through Agentic DevOps, where you will apply AI-assisted techniques to cloud automation and infrastructure as code. You will master Azure CLI automation, harness Bicep and Terraform with intelligent assistance, and leverage Azure DevOps Pipelines and GitHub Actions to create intelligent CI/CD workflows. This module demonstrates how agents elevate DevOps practices, enabling faster, more reliable deployments with reduced human error and improved consistency.

The course shifts to methodological excellence with Spec-Driven Development Foundations, teaching you to approach agentic solution design with clarity and purpose. You will learn specification-driven workflows, constitution and technical planning, and how to decompose complex requirements into actionable tasks using GitHub Spec Kit. This foundation ensures that your agentic implementations are grounded in clear specifications and measurable outcomes, not just clever code.

The capstone experience, End-to-End Agentic Development, brings all learning together in a comprehensive project spanning planning, proof of concept, orchestration, implementation, modernization, testing, and documentation. You will apply every concept learned across modules in a realistic development scenario, learning to evaluate, upgrade, and validate agentic systems in production environments. By completing this course, you will emerge as a skilled practitioner ready to architect AI-assisted solutions that drive innovation, accelerate development cycles, and enhance team capabilities across your organization.

Who should attend

- Software Engineers interested in leveraging AI agents to enhance their coding productivity and capabilities
- Software Architects looking to understand how to integrate and manage AI agents within software development lifecycles
- Team Leads and Managers aiming to explore how AI agents can be utilized to optimize team workflows and project outcomes

Prerequisites

Experience with software development at a professional level

Course Content

Module 1: GitHub Copilot Fundamentals

- GitHub Codespaces / Dev Containers
- GitHub Copilot Introduction
- Selecting Models
- AI Assisted Coding
- Slash Commands & Agent Controls
- Context Variables
- Pull Requests & Code Reviews
- Management and Settings

Module 2: GitHub Copilot Artifacts & Tools

- Copilot Instructions
- Prompt Files
- Model Context Protocol
- Custom Agents
- Agents Overview
- Repository Agents
- Claude Agents
- Agent Skills

- Copilot Memory
- Understanding and Shaping GitHub Copilot's Context Window
- GitHub Copilot Hooks
- Agent Plugins
- Agent Debug Panel
- Creating Customizations from Chat

Module 3: Implementing Agentic Coding

- Using Local Agents and Agent Mode
- Delegating Tasks to Cloud Agents
- Using Background Agents
- Multi Agent Orchestration
- Using Anthropic Claude Code Agents
- Agentic Browser Automation

Module 4: GitHub Copilot CLI, SDK and Advanced Topics

- GitHub Copilot CLI
- Business Case: HR Document Updates Automation
- GitHub Agentic Workflows
- GitHub Copilot SDK
- Copilot SDK Demos
- Implementing & Using MCP Apps

Module 5: Agentic DevOps

- Automation using Azure CLI
- Azure Developer CLI (azd) Agentic Mode
- Infrastructure as Code (IaC) – Bicep & Terraform
- Azure DevOps Pipelines & GitHub Actions

Module 6: Spec-Driven Development Foundations

- Spec Driven Development
- Spec-driven workflow
- Constitution, Specification and Technical Plan
- Tasks & Implementation
- Getting Started with GitHub Spec Kit
- Exercise: Implement a product feature using GitHub Spec Kit

Module 7: Capstone Project: End-to-End Agentic Development

- Planning & Proof of Concept
- Orchestrating & Implementation
- Upgrading & Modernization
- Testing using Copilot
- Using Copilot for Documentation

About Fast Lane



Fast Lane is a global, award-winning specialist in technology and business training as well as consulting services for digital transformation. As the only global partner of the three cloud hyperscalers- Microsoft, AWS and Google- and partner of 30 other leading IT vendors, Fast Lane offers qualification solutions and professional services that can be scaled as needed. More than 4,000 experienced Fast Lane professionals train and advise customers in organizations of all sizes in 90 countries worldwide in the areas of cloud, artificial intelligence, cyber security, software development, wireless and mobility, modern workplace, as well as management and leadership skills, IT and project management.

Fast Lane Services

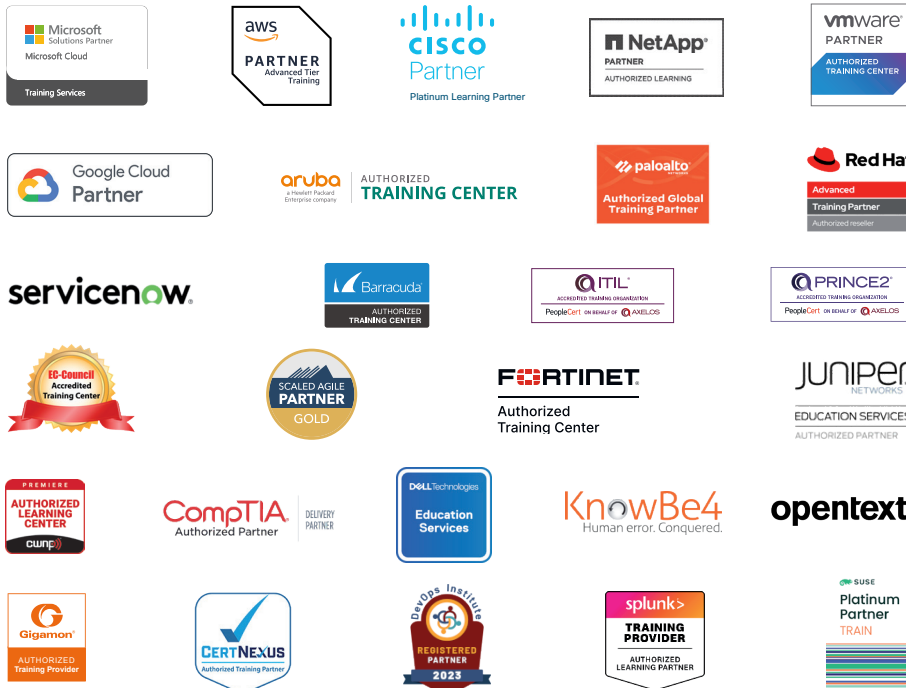
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