

5-week online certification cohort

Week-by-week overview of the topics and associated tasks:

Week 1: Architecture

- **Focus:** This week establishes the foundations of modern architecture. Sessions are based on talks about the evolving role of the architect and core resilience patterns for distributed systems, such as timeouts, retries, and idempotency.
- **Sample discussion task:** You will be asked to weigh infrastructure choices and articulate the trade-offs. For example, you might be asked to provide a recommendation to your CTO on choosing serverless over Kubernetes, highlighting the pros and cons of each solution.
- **Weekly homework:** You will be given a system architecture diagram and asked to apply the resilience patterns discussed in the session to improve the platform's stability.

Week 2: Decentralized Decisions

- **Focus:** This module explores the sociotechnical aspects of architecture, examining how to foster collaborative relationships between teams and empower them to make informed architectural decisions effectively.

- **Sample discussion task:** Within your group, you'll explore how to enable teams to make their own architectural decisions. This includes defining the necessary guardrails and planning how to handle changes that cross domain boundaries within the system.
- **Weekly homework:** You will be asked to reflect on your current organization and devise a plan to transform your architecture team to offload more work to the teams responsible for services, while establishing guardrails to prevent system-wide issues.

Week 3: Platform

- **Focus:** This week's sessions concentrate on platform engineering as a sociotechnical practice, exploring how to treat your platform as an evolving product within a larger ecosystem.
- **Sample discussion task:** You will discuss the common tensions in platform engineering, such as balancing standardization with flexibility or simplicity with complexity. The goal is to propose a strategy for managing these tensions to create a sustainable platform.
- **Weekly homework:** You will create a detailed action plan to foster collaboration between a platform team and developers in a mid-sized organization, especially in a scenario where developer engagement is low and "shadow IT" is emerging.

Week 4: AI

- **Focus:** This week introduces the architectural challenges and opportunities presented by AI. You will learn how to make AI agents effective for your team and apply systems thinking to scale multi-agent architectures responsibly.
- **Sample discussion task:** You will strategize how to integrate AI agents into your team's workflow to enhance creativity while ensuring responsible usage and clear boundaries. You'll

also discuss architectural patterns for building multi-agent systems that can self-regulate while maintaining transparency.

- **Weekly homework:** This week's homework is dedicated to working on the final capstone project.

Week 5: AI: Where Does It Fit in Architecture & Capstone Presentations

- **Focus:** The final week examines the practical state of AI in the software development lifecycle, from autocomplete to agents. The majority of the time is dedicated to the capstone project presentations.
- **Capstone Project:** This is the culminating project of the certification.
 - The project invites you to explore the transformative role of AI in either platform engineering or software architecture.
 - Your team will analyze how AI reshapes workflows and decision-making, identifying key considerations for harnessing AI's potential in a responsible manner. This analysis will cover topics such as human oversight, ethical governance, and system complexity.
 - The final deliverable is an article presenting a shared vision and actionable strategies for integrating AI into your chosen discipline. Each group will present their findings in a 20-minute presentation followed by a 30-minute discussion.