

SESSION 1: PROMPT ENGINEERING INDUSTRY STANDARDS

From Ad-Hoc AI Prompting to Structured, Reusable
Workflows

90 minutes (15 min presentation + 60 min hands-on + 15 min review)

The Problem: Ad-Hoc AI Prompting

- Current State: "Hey AI, migrate this controller to Spring Boot 3"
- **Problems with Ad-Hoc Approach:**
 - Every prompt starts from scratch
 - No shared team knowledge in prompts
 - Inconsistent results across files
 - Can't track what worked vs what didn't
 - Becomes 'vibe coding' (unreviewed AI output)

Industry Standards: The Three Tiers

- Tier 1: Proven Patterns (10+ years)
 - Few-shot, Chain-of-Thought, Persona, Template patterns
 - ADRs (Architecture Decision Records), RFC Process
- Tier 2: Emerging Standards (1-3 years)
 - .cursorrules, .github/copilot-instructions.md
 - 3,000+ forks of awesome-cursorrules repository
- Tier 3: Experimental (months to 1-2 years)
 - GitHub Spec-Kit (Sept 2024, ~14 months old as of Nov 2025)
 - Interesting experiments, growing understanding, not yet proven at scale

Configuration Standards: .cursorrules & Copilot

Instructions

- Natural language files telling AI tools how to work with your project
- **.cursorrules Example:**
 - Tech Stack: Spring Boot 3.2+, Java 17+, Jakarta EE
 - Standards: DRY, KISS, YAGNI, constructor injection
 - DO NOT: Use deprecated javax.* packages
- **Key Benefits:**
 - Team-shared knowledge (version controlled)

Decision Documentation: ADRs vs Structured Prompts

- Option A: Architecture Decision Records (Industry Standard)
 - Proven since 2011, used by Microsoft, AWS, Google, Spotify
 - Format: docs/adr/0001-use-jakarta.md
 - Documents WHY decisions were made
- Option B: Structured Prompt Files (Experimental Pattern)
 - AI-friendly format with rules and success criteria

Applying Standards: One Practical Example

- Today's Hands-On: 5-File Workflow Pattern
 - File 1: System Prompt (maps to: .cursorrules, persona pattern)
 - File 2: Task Specification (maps to: template pattern)
 - File 3: Execution Plan (maps to: task decomposition, ReAct)
 - File 4: Decision Documentation (maps to: ADR, alternatives)
 - File 5: Code Generation (maps to: few-shot +