AWS AI Tools Guide for FSU Design Sprint

Your Toolkit for Building AI-Powered Solutions

Welcome!

This guide will help you navigate the AWS AI tools available during the FSU Design Sprint. Whether you're new to AWS or an experienced developer, we've organized these tools into three tiers based on technical complexity. **Remember: You won't be graded on which tier you use** - choose the tools that best match your team's skills and your solution's needs!

🎯 Tier 1: No-Code Tools (Everyone Can Use)

These tools require **zero coding experience**. If you can use a web browser, you can use these tools!

PartyRock - AWS AI Playground

What it is: A free, web-based platform where you can build AI applications just by describing what you want in plain English.

Why use it: Perfect for rapid prototyping and testing ideas without any technical barriers.

Getting Started:

- Visit: https://partyrock.aws/
- Sign in with your Google, Apple, or Amazon account (no AWS account needed!)
- Describe your app idea in the prompt box
- PartyRock builds it for you automatically

What you can build:

- Chatbots that answer questions about internships
- Resume analyzers that provide feedback
- Cover letter generators customized for specific jobs

- Interview preparation assistants
- Career path recommendation tools

Key Features:

- **User Input Widgets:** Text boxes, dropdowns, sliders for collecting information
- **Document Upload:** Upload PDFs, Word docs, or text files
- **Chatbot Widget:** Create conversational AI assistants
- **Text Generation:** Generate content like resumes, emails, or job descriptions
- **Image Generation:** Create visuals for presentations or mockups

Pro Tips:

- Start simple and add complexity gradually
- Test your app frequently as you build
- Share your PartyRock app link with judges to demonstrate your prototype

---

Amazon Bedrock Playground

What it is: A user-friendly interface to interact with 100+ world-class AI models from companies like Anthropic (Claude), Meta (Llama), OpenAI, Google, and more.

Why use it: Access the best AI models through one platform without writing code. Switch between models easily to find the best one for your needs.

Getting Started:

- Access through your team's AWS account (credentials provided by event organizers)
- Navigate to Amazon Bedrock in the AWS Console
- Select "Playgrounds" from the left menu
- Choose "Chat" or "Text" playground to start

What you can do:

- Test different AI models to see which works best for your use case
- Generate content (job descriptions, resume tips, interview questions)
- Analyze documents and extract key information

- Compare responses from different models side-by-side

Key Features:

- **Model Selection:** Try Claude, Llama, Mistral, and many others
- **System Prompts:** Set instructions that guide how the AI behaves
- **Temperature Control:** Adjust creativity vs. consistency in responses
- **Guardrails:** Set boundaries on what topics the AI can discuss
- **Response Streaming:** See answers appear in real-time

Pro Tips:

- Experiment with different models - each has unique strengths
- Save your best prompts for reuse
- Use system prompts to make the AI act as a career counselor, resume expert, etc.

🔧 Tier 2: Low-Code Tools (Some Technical Comfort)

These tools have visual interfaces but involve some technical concepts. If you're comfortable following step-by-step instructions, you can use these!

Amazon Bedrock Knowledge Bases

What it is: A tool that lets you connect your own documents and data to AI models so they can answer questions based on your specific information.

Why use it: Foundation models don't know about your specific data (internship listings, resume templates, company information, etc.). Knowledge Bases solve this by teaching the AI about your content.

How it works (Retrieval Augmented Generation - RAG):

1. You upload your documents (PDFs, Word docs, text files)
2. AWS converts them into a format AI models understand
3. When someone asks a question, the system finds relevant information from your your source documents. The AI uses that information to generate accurate, cited answers

Getting Started:

- Access through your team's AWS account
- Navigate to Amazon Bedrock → Knowledge Bases
- Click "Create knowledge base"
- Follow the setup wizard (we'll walk through this together!)

What you can build:

- An AI assistant that knows about specific internship programs
- A chatbot trained on resume best practices
- A system that answers questions about your university's career services

Key Concepts:

- **Data Source:** Where your documents are stored (S3 bucket)
- **Embeddings:** Mathematical representations of your text that AI understands
- **Vector Database:** Where embeddings are stored for quick retrieval
- **Citations:** References showing which documents the AI used for its answer

Pro Tips:

- Organize your documents clearly before uploading
- Use descriptive file names
- Test with simple questions first, then get more complex
- Check citations to verify accuracy

💻 Tier 3: Full Development Tools (Technical Teams)

These tools are designed for teams comfortable with software development concepts. Don't worry - AI assistance makes them more accessible than ever!

Kiro - The AI-Powered IDE

What it is: An Integrated Development Environment (IDE) with AI deeply integrated to help you plan, design, and build applications. Think of it as a smart coding assistant that understands your entire project.

Why use it: Turn your PRFAQ into technical specifications and working code with AI assistance. You remain in control while AI handles repetitive tasks and provides expert guidance.

Getting Started:

- Download Kiro from AWS (link provided by event organizers)
- Install on your laptop (Windows, Mac, or Linux)
- Sign in with your AWS account
- Open a new project or workspace

Two Main Modes:

1. Vibe Mode (Conversational):

- Describe what you want to build in natural language
- Kiro asks clarifying questions
- Iteratively refine your idea together
- Great for brainstorming and early-stage planning

2. Spec Mode (Structured):

- Paste in your PRFAQ or detailed requirements
- Kiro generates technical specifications
- Creates architecture diagrams
- Generates starter code
- Perfect for turning your Working Backwards document into a technical plan

Spec Mode Prompt Example – Convert your PRFAQ into a solution!

Based on the PRFAQ below, design a technical architecture and recommend AWS services to build this solution. Focus on:
1. System architecture with key components and data flow
2. Specific AWS services for each feature (prioritize free tier options for prototyping)
3. Implementation tasks organized by priority
<PASTE PRFAQ CONTENT HERE>

What you can do:

- Convert your PRFAQ into a technical architecture
- Generate code for web applications, APIs, or mobile apps
- Get AI suggestions for best practices and optimizations
- Debug code with AI assistance
- Create documentation automatically

Key Features:

- **AI Chat:** Ask questions about your code or project anytime
- **Code Generation:** AI writes boilerplate and repetitive code
- **Code Explanation:** Understand what existing code does
- **Refactoring:** Improve code quality with AI suggestions
- **Multi-file Awareness:** AI understands your entire project context

Pro Tips:

- Start with Spec Mode using your PRFAQ
- Be specific in your descriptions
- Review and test all AI-generated code
- Use Kiro to explain AWS service code examples

Amazon Bedrock Agents

What it is: A framework for building autonomous AI agents that can complete multi-step tasks by using tools, accessing data, and making decisions.

Why use it: Automate complex workflows like collecting student information, searching for matching internships, generating customized resumes, and submitting applications - all with minimal human intervention.

How Agents Work:

1. **Planning:** Agent breaks down your goal into steps
2. **Action:** Agent uses tools (APIs, databases, functions) to complete each step
3. **Reasoning:** Agent evaluates results and adjusts the plan as needed

Getting Started:

- Access through your team's AWS account
- Navigate to Amazon Bedrock → Agents
- Click "Create Agent"
- Define your agent's instructions and available tools
- Our SA team will help you design the right agent for your use case

What you can build:

- An agent that collects student info and generates tailored resumes
- An agent that searches internship databases and matches students to opportunities
- An agent that schedules mock interviews and sends reminders
- An agent that tracks application status and follows up automatically

Key Concepts:

- **Instructions:** The agent's purpose and how it should behave
- **Action Groups:** Tools and APIs the agent can use
- **Knowledge Bases:** Information sources the agent can reference
- **Orchestration:** How the agent plans and executes tasks

Advanced Features:

- **Code Interpreter:** Agent can write and run Python code
- **Memory:** Agent remembers context across conversations
- **Multi-Agent Collaboration:** Multiple specialized agents working together

Pro Tips:

- Start with a single, well-defined task
- Clearly define what tools your agent needs
- Test thoroughly with different scenarios
- Our SA team is here to help - ask questions!

🚀 Getting Help During the Event

AWS Solutions Architects (SAs) are here to help!

- Ask questions anytime during the competition
- Get guidance on which tools to use
- Troubleshoot technical issues
- Review your architecture and provide feedback

Best Practices:

- Start with the simplest tool that meets your needs
- Test early and often
- Don't be afraid to switch tools if something isn't working
- Focus on demonstrating your idea - perfection isn't required!

📚 Additional Resources

AWS Documentation:

- PartyRock: https://partyrock.aws/
- Amazon Bedrock: https://docs.aws.amazon.com/bedrock/
- Kiro: https://kiro.dev/docs/

🎓 Remember

The most important thing is your idea! AWS has the technology to bring any well-thought-out concept to life. Choose the tools that make sense for your team, focus on solving real problems for students seeking internships, and don't hesitate to ask for help.

Good luck, and happy building!

This guide was created for the FSU Design Sprint. For questions during the event, contact the AWS SA team.