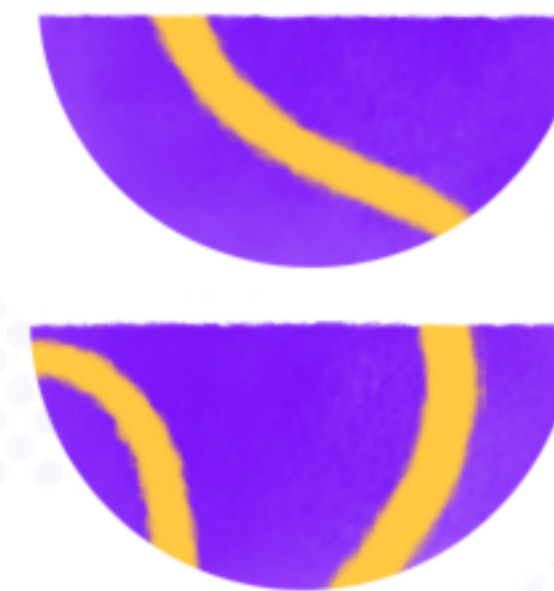




Maximize Productivity with the Kiro CLI

Faye Ellis



“Today, more than a quarter of all new code at Google is generated by AI, then reviewed and accepted by engineers. This helps our engineers do more and move faster.”



“20%, 30% of the code that is inside of our repos today and some of our projects are probably all written by software”



At AWS:

Amazon Q Developer to migrate tens of thousands of production applications from Java 8 / 11 to Java 17

“savings of over 4,500 years of development work for over a thousand developers (when compared to manual upgrades)”

<https://aws.amazon.com/blogs/devops/amazon-q-developer-just-reached-a-260-million-dollar-milestone/>



It's Clear Tech Roles are Changing



AI is already boosting employee productivity by 50% *



Traditional roles won't disappear, but roles are changing



It's never been more important to keep on top of the latest tools and frameworks

* <https://gtnr.it/3Cty1EH>



Faye Ellis

Principal Training Architect at Pluralsight

<https://www.linkedin.com/in/fayeellis/> | @fayecloudguru



AWS Community Hero

Passionate about all things cloud, worked as a SysAdmin, DevOps engineer, and architect

I have taught AWS skills to millions of people

Based in London, and I love making bread!



SESSION BREAKDOWN



What is the Kiro CLI?

Sample Prompts to Try

How I use the Kiro CLI to Maximize Productivity

Tech Roles are Changing

Tutorials and Resources



Getting Started with and Kiro (and Amazon Q)

AWS console
Amazon Q
for troubleshooting

IDE
Kiro IDE
(fork of VS Code)

Terminal
Kiro CLI



Key Benefits of Kiro

Automation

Code suggestions

Code reviews

Code documentation

Analyze cost data

Troubleshooting

Similar Tools

Alternative terminal-based CLI agents



GitHub Copilot

Code suggestions and auto-completion for general-purpose coding in a variety of programming languages



Google Gemini

Coding, debugging, automation, great if you're working with Google Cloud and Android



Claude Code

Edit files, run commands, assist with coding workflows



Kiro is Integrated with the AWS Ecosystem



Regularly work with AWS services



AWS console, AWS CLI, AWS SDKs, CloudFormation / Terraform



Try Kiro!



Free or Pro Tier?

Perpetual free tier

50 credits per month

Simple prompts consume < 1 credit

500 credits on first sign-up!

vs.

Pro tier

Pro (\$20/month) - 1,000 credits

Pro+ (\$40/month) - 2,000 credits

Power (\$200/month) - 10,000 credits

Opting Out of Data Sharing

Applies to free-tier only

Data you input may be used for service improvement

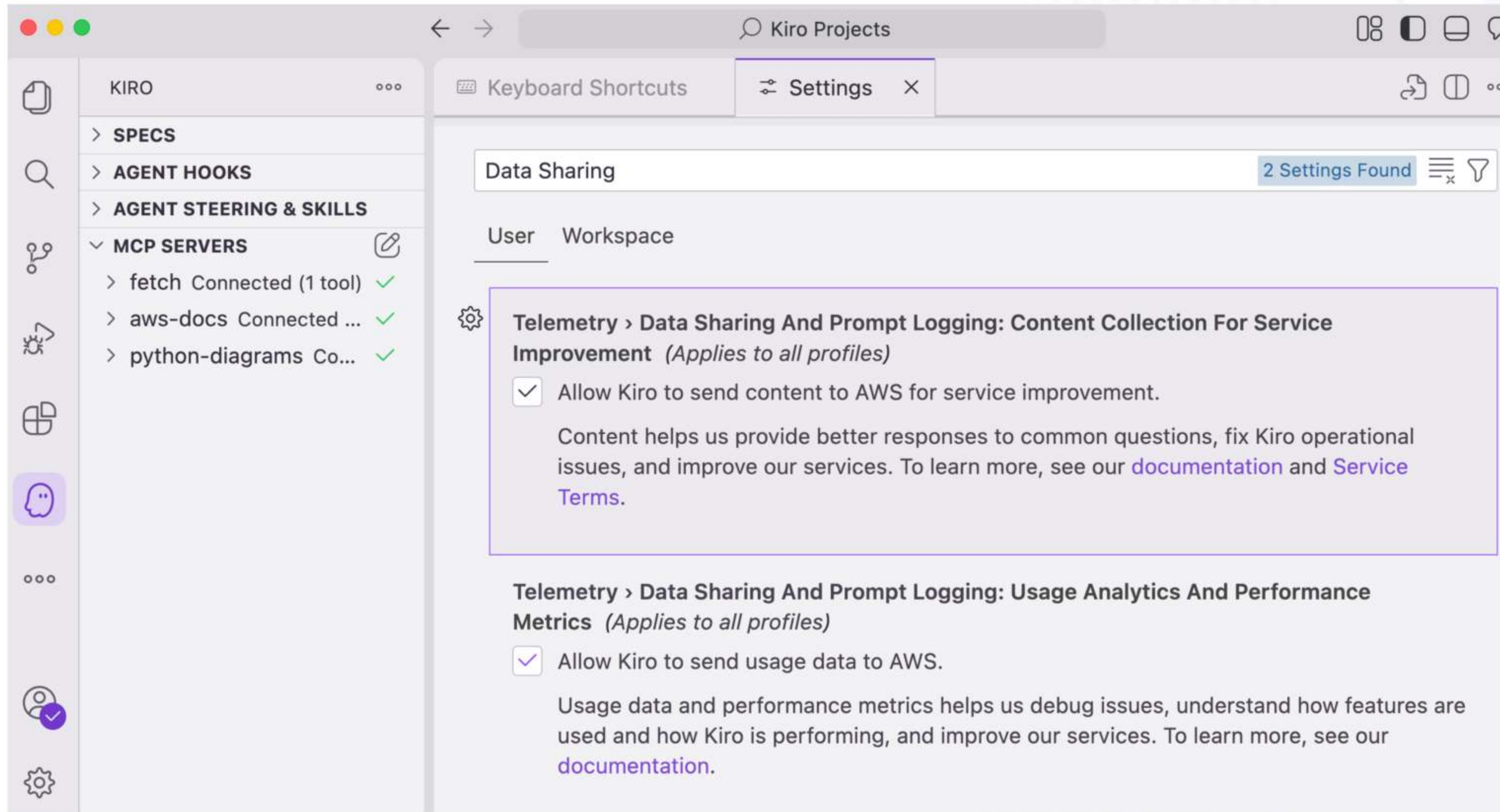
Debugging, model training, fixing issues

Opt out in settings

Pro-tier does not use your data at all



Opting Out of Data Sharing



The screenshot shows the Kiro Projects application interface. The browser address bar displays "Kiro Projects". The left sidebar contains a navigation menu with categories: KIRO, SPECS, AGENT HOOKS, AGENT STEERING & SKILLS, and MCP SERVERS. Under MCP SERVERS, three items are listed: "fetch Connected (1 tool)", "aws-docs Connected ...", and "python-diagrams Co...", each with a green checkmark. The main content area is titled "Settings" and has a search bar containing "Data Sharing", which has found "2 Settings Found". Below the search bar are tabs for "User" and "Workspace". Two settings are listed, both with checked checkboxes:

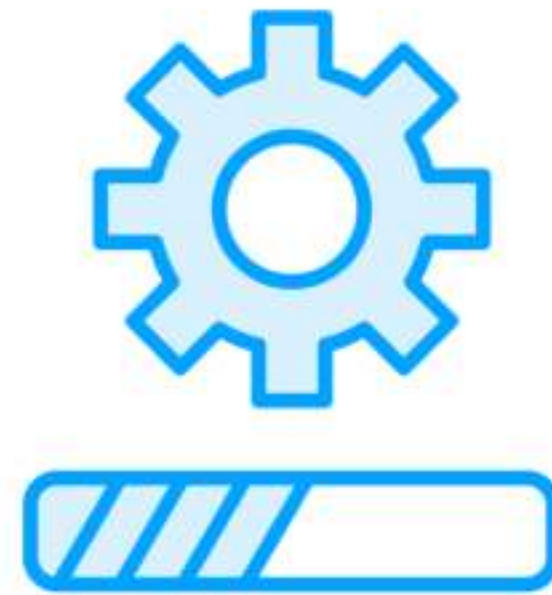
- Telemetry > Data Sharing And Prompt Logging: Content Collection For Service Improvement** (Applies to all profiles)
 - Allow Kiro to send content to AWS for service improvement.
 - Content helps us provide better responses to common questions, fix Kiro operational issues, and improve our services. To learn more, see our [documentation](#) and [Service Terms](#).
- Telemetry > Data Sharing And Prompt Logging: Usage Analytics And Performance Metrics** (Applies to all profiles)
 - Allow Kiro to send usage data to AWS.
 - Usage data and performance metrics helps us debug issues, understand how features are used and how Kiro is performing, and improve our services. To learn more, see our [documentation](#).



What's so Different About the Kiro CLI?



More than Q & A



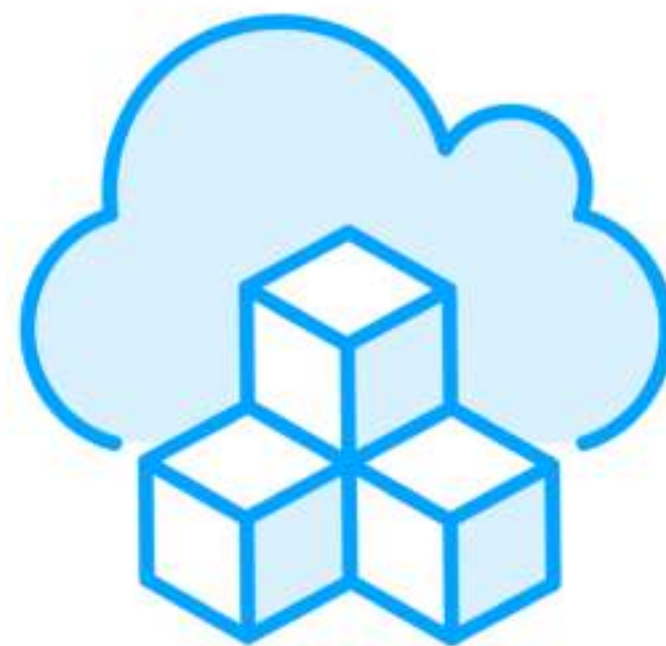
Execute shell commands



Read and write files



**Take action by invoking
the AWS CLI**



**Common programming
languages**



**All in your terminal
(Mac, Linux, windows)**



Extend Capabilities with MCP Servers (Model Context Protocol)



AWS Pricing MCP Server creates cost analysis reports based on current pricing



AWS Terraform MCP Server lets you run Terraform commands, get best practice advice, run security scans on code



Amazon EKS MCP Server allows you to create EKS clusters, deploy apps, troubleshoot



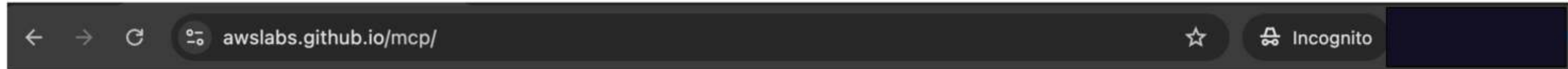
AWS Diagram MCP Server generates diagrams using the diagrams Python package



AWS Documentation MCP Server allows you to read and search AWS documentation



https://awslabs.github.io/mcp/



Get Started

Welcome to AWS MCP Servers

Installation

Vibe Coding Tips and Tricks

Available AWS MCP Servers

Getting Started

Documentation

Infrastructure & Deployment

AI & Machine Learning

Data & Analytics

Developer Tools & Support

Integration & Messaging

Cost & Operations

Healthcare & Lifesciences

Home > Get Started > Welcome to AWS MCP Servers

Welcome to AWS MCP Servers

Get started with AWS MCP Servers and learn core features.

The AWS MCP Servers are a suite of specialized MCP servers that help you get the most out of AWS, wherever you use MCP.

What is the Model Context Protocol (MCP) and how does it work with AWS MCP Servers?

The Model Context Protocol (MCP) is an open protocol that enables seamless integration between LLM applications and external data sources and tools. Whether you're building an AI-powered IDE, enhancing a chat interface, or creating custom AI workflows, MCP provides a standardized way to connect LLMs with the context they need.

What is the Model Context Protocol (MCP) and how does it work with AWS MCP Servers?

Why AWS MCP Servers?

Getting Started Essentials

Available AWS MCP Servers

When to use local vs remote MCP servers?

Local MCP Servers

Remote MCP Servers

Workflows

Use Cases for the Servers

Additional Resources



MCP Configuration - mcp.json

```
{  
  "mcpServers": {  
    "fetch": {  
      "command": "/opt/homebrew/bin/uvx",  
      "args": [  
        "mcp-server-fetch"  
      ],  
      "env": {},  
      "disabled": false,  
      "autoApprove": []  
    },  
    "aws-docs": {  
      "command": "/opt/homebrew/bin/uvx",  
      "args": [  
        "awslabs.aws-documentation-mcp-server@latest"  
      ],  
      "env": {  
        "FASTMCP_LOG_LEVEL": "ERROR"  
      },  
      "disabled": false,  
      "autoApprove": []  
    }  
  }  
}
```

Command to run the MCP server

Arguments to pass

Environment variables

Whether the server is disabled

Tool names to auto-approve without prompting





Sample Prompts to Try





Examples to Explore

Great prompts that you can try

Save time in your daily activities

Try them out, modify to make them your own

Use as inspiration for prompts that serve you best



“Create a new EC2 instance which is a clone of my existing instance named my-web-server. Use the same security group and IAM role.”



“[System] You are an AWS Cost Optimization Analyst

[User] Write a Python (Boto3) script that:

- 1. Lists all EC2 instances across all regions**
- 2. Filters for instances with CPUUtilization < 5% over the past 30 days**
- 3. Writes a CSV report: InstanceId, Region, AverageCPU**



“Help me troubleshoot this error: [Error message]”



“Review this Terraform template for a mission-critical environment, ensuring the VPC has multi-AZ resilience. Suggest improvements for security, cost efficiency and high performance”



“Generate a step-by-step approach to modularize the MarketingPreferences application into AWS Lambda functions”

Review and refine

“Apply the proposed plan across the codebase. Creating new source files, tests, and documentation”



“The local storage on my laptop is running out, can you help suggest which large files could be deleted to free up my disk”





How to Maximize Productivity



How do I use Kiro to Maximize Productivity?

**Cloud architect, builder,
content creator**

**Content creation: online
lessons and labs**

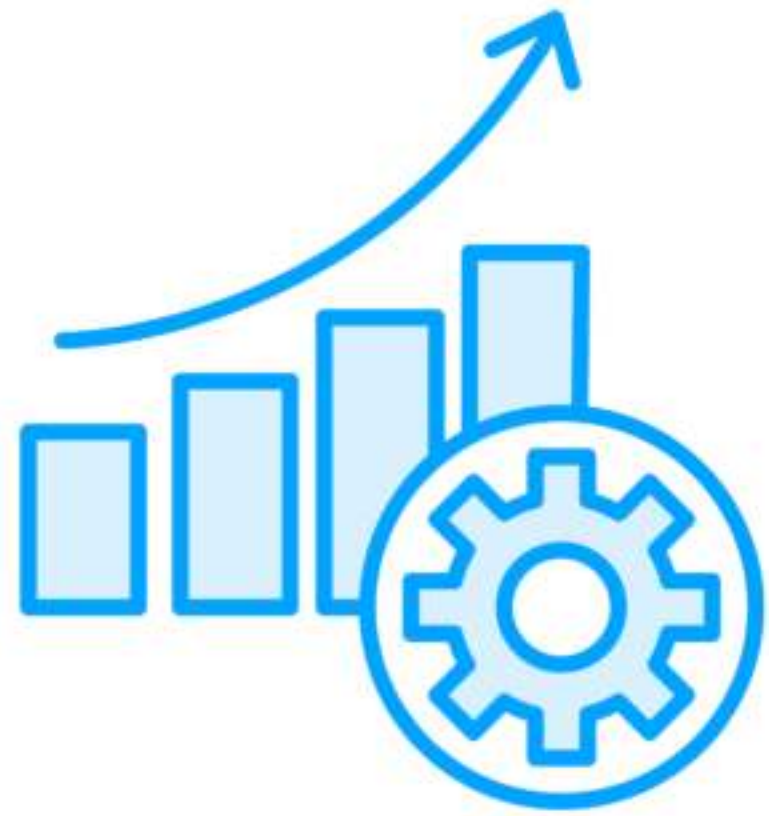
**Hands-on
implementation with
AWS**

**Designing and building
practical exercises**

**Sandbox constraints /
troubleshooting**



The Back Story



We are all being asked to do more: 500 unique pieces of content per quarter!



Every day there's a new skill to learn / and teach!



I challenged myself to integrate AI into every possible area





Demos



1. Generate Synthetic Data for Testing

Generate a csv file containing 100 examples of synthetic names and addresses



2. Help With Shell Commands

Show me how to find all files that have been modified in the last 7 days



```
+ 83: Dante Coleman,951 Narcissus St,Fremont,CA,94536
+ 84: Ella Jenkins,162 Gladiolus Ave,Gilbert,AZ,85233
+ 85: Finn Perry,273 Wisteria Rd,Baton Rouge,LA,70801
+ 86: Gia Powell,384 Honeysuckle Dr,Richmond,VA,23218
+ 87: Heath Long,495 Clematis Ln,Spokane,WA,99201
+ 88: Ivy Patterson,516 Verbena Ct,Des Moines,IA,50301
+ 89: Jude Hughes,627 Lantana Way,Tacoma,WA,98401
+ 90: Kira Flores,738 Geranium Pl,Fontana,CA,92335
+ 91: Lance Washington,849 Hibiscus Blvd,San Bernardino,CA,92401
+ 92: Mira Butler,951 Amaryllis St,Modesto,CA,95350
+ 93: Nico Simmons,162 Calla Ave,Moreno Valley,CA,92551
+ 94: Opal Foster,273 Cosmos Rd,Fayetteville,NC,28301
+ 95: Pierce Gonzales,384 Delphinium Dr,Shreveport,LA,71101
+ 96: Quinn Bryant,495 Echinacea Ln,Akron,OH,44301
+ 97: Ruby Alexander,516 Freesia Ct,Little Rock,AR,72201
```

Allow this action? Use 't' to trust (always allow) this tool for the session. [y/n/t]:

```
8% > y
```

```
Creating: /Users/faye/synthetic_data.csv
- Completed in 0.1s
```

> Done! I've created `synthetic_data.csv` with 100 rows of synthetic names and addresses. The file includes columns for name, street, city, state, and zip code.

```
▶ Credits: 0.33 • Time: 38s
```

```
8% > □
```

3. AWS CLI Help

What is the command to stop an Amazon Comprehend sentiment detection job using the AWS CLI?



This searches from the current directory (.) for files (`-type f`) modified within the last 7 days (`-mtime -7`).

Common variations:

bash

```
# With more details (permissions, size, date, name)
```

```
find . -type f -mtime -7 -ls
```

```
# Exclude certain directories like .git
```

```
find . -type f -mtime -7 -not -path "*/.git/*"
```

```
# Only show specific file types (e.g., Python files)
```

```
find . -type f -name "*.py" -mtime -7
```

```
# Execute a command on each file found
```

```
find . -type f -mtime -7 -exec ls -lh {} \;
```

Time options:

- `-mtime -7` = modified less than 7 days ago
- `-mtime 7` = modified exactly 7 days ago
- `-mtime +7` = modified more than 7 days ago
- `-mmin -60` = modified in the last 60 minutes

► Credits: 0.05 • Time: 11s

8% >

4. Troubleshooting Approach

I have already configured IAM permissions, but I am seeing this error:
An error occurred (AccessDenied) when calling the PutObject operation:
Access Denied.

How should I approach troubleshooting this error?



Time options:

- `-mtime -7` = modified less than 7 days ago
- `-mtime 7` = modified exactly 7 days ago
- `-mtime +7` = modified more than 7 days ago
- `-mmin -60` = modified in the last 60 minutes

▶ Credits: 0.05 • Time: 11s

8% > What is the command to stop an Amazon Comprehend sentiment detection job using the AWS CLI?

> The command to stop an Amazon Comprehend sentiment detection job is:

bash

```
aws comprehend stop-sentiment-detection-job --job-id <job-id> --region <region>
```

Replace `<job-id>` with your actual job ID and `<region>` with your AWS region (e.g., `us-east-1`).

Example:

bash

```
aws comprehend stop-sentiment-detection-job --job-id 1234567890abcdef --region us-east-1
```

The command returns the job ID and its status (which will change to `STOP_REQUESTED` and then `STOPPED`).

▶ Credits: 0.04 • Time: 8s

8% >

5. Best Practice Advice

Review this IAM policy for security best practices



```
faye@KRQ4YWQF9W-MAC Demos % kiro-cli
```

```
✓ fetch loaded in 0.59 s  
✓ python-diagrams loaded in 0.85 s  
✓ aws-docs loaded in 0.92 s
```



Did you know?

Kiro can use tools without asking for confirmation every time. Give `/tools trust` a try

```
Model: auto (/model to change) | Plan: KIRO FREE (/usage for more detail)
```

```
6% > what would you like to do?
```

6. Help With SDKs

Explain how to use boto3 to invoke a foundation model using Amazon Bedrock



```
"StringEquals": {
  "s3:x-amz-server-side-encryption": "AES256"
}
}
```

- If this is for a specific principal, add explicit **Principal** field rather than relying on attachment context

- Scope ListBucket to specific prefixes using condition:

```
json
"Condition": {
  "StringLike": {
    "s3:prefix": ["input/*", "output/*"]
  }
}
```

Good Practices Already Followed:

- Least privilege on actions (read vs write separated)
- Resource-level restrictions using prefixes
- No wildcard (*) resources

Would you like me to create a hardened version of this policy?

▶ Credits: 0.11 • Time: 14s

7% >

7. Explain Code

Explain what the function `lambda_function.py` does



```
8% > /quit
```

```
faye@KRQ4YWQF9W-MAC Demos % kiro-cli
```

```
✓ fetch loaded in 0.68 s
```

```
✓ python-diagrams loaded in 0.84 s
```

```
✓ aws-docs loaded in 0.91 s
```



Did you know?

Run `/prompts` to learn how to build & run repeatable workflows

Model: `auto` (`/model` to change) | Plan: KIRO FREE (`/usage` for more detail)

```
6% > Want to know what commands I have? Just ask
```

8. Explain Best Practices for Invoking Services

Explain the best practices when setting common request body parameters for models in Amazon Bedrock

Uses the AWS Documentation MCP server



6% > Explain what function.py does

> I'll read the function.py file to explain what it does.

Reading file: `function.py`, all lines (using tool: read)

✓ Successfully read 1457 bytes from `function.py`

– Completed in 0.0s

> This is an AWS Lambda function that serves as a fulfillment handler for an Amazon Lex chatbot. Here's what it does:

Purpose: Checks order status by looking up order information in DynamoDB

Flow:

1. Extracts the `OrderId` from the Lex bot's intent slots

2. Queries a DynamoDB table (name from `TABLE_NAME` environment variable) using the order ID

3. Returns a response to Lex with:

– Success case: "Order {id} is currently: {status}"

– Not found case: "Sorry, I couldn't find order {id}"

– Error case: "There was an error looking up your order."

Response Format: Returns a Lex V2 response structure that:

– Closes the dialog (no further interaction needed)

– Marks the "CheckOrderStatus" intent as either "Fulfilled" or "Failed"

– Includes a plain text message for the user

This is a typical pattern for integrating Lex conversational interfaces with backend data sources.

▶ Credits: 0.09 • Time: 13s

7% > █

9. Creating a Diagram using AWS Diagram MCP Server

Create a draw.io compatible diagram that shows what will be created by
`tm_prerequisites.yaml`
Uses the AWS Diagrams MCP server



- Maximum of 10 items for most models
- Useful for controlling output format and preventing unwanted continuation

Key Best Practices

1. **Parameter interaction:** Don't tune both `temperature` and `top_p` together – adjust one or the other based on your use case
2. **Model-specific limits:** Always check the specific model's documentation for optimal parameter ranges, as they vary between providers (Claude, DeepSeek, Mistral, etc.)
3. **Start conservative:** Begin with lower temperature values and increase gradually if you need more creativity
4. **Monitor quality:** Some models degrade in quality beyond certain token limits even if technically supported
5. **Use the Converse API:** For newer implementations, prefer the Converse API over model-specific APIs for better standardization across different models

References:

- [1] DeepSeek models – Amazon Bedrock – <https://docs.aws.amazon.com/bedrock/latest/userguide/model-parameters-deepseek.html>
- [2] Anthropic Claude Text Completions API – Amazon Bedrock – <https://docs.aws.amazon.com/bedrock/latest/userguide/model-parameters-anthropic-claude-text-completion.html>

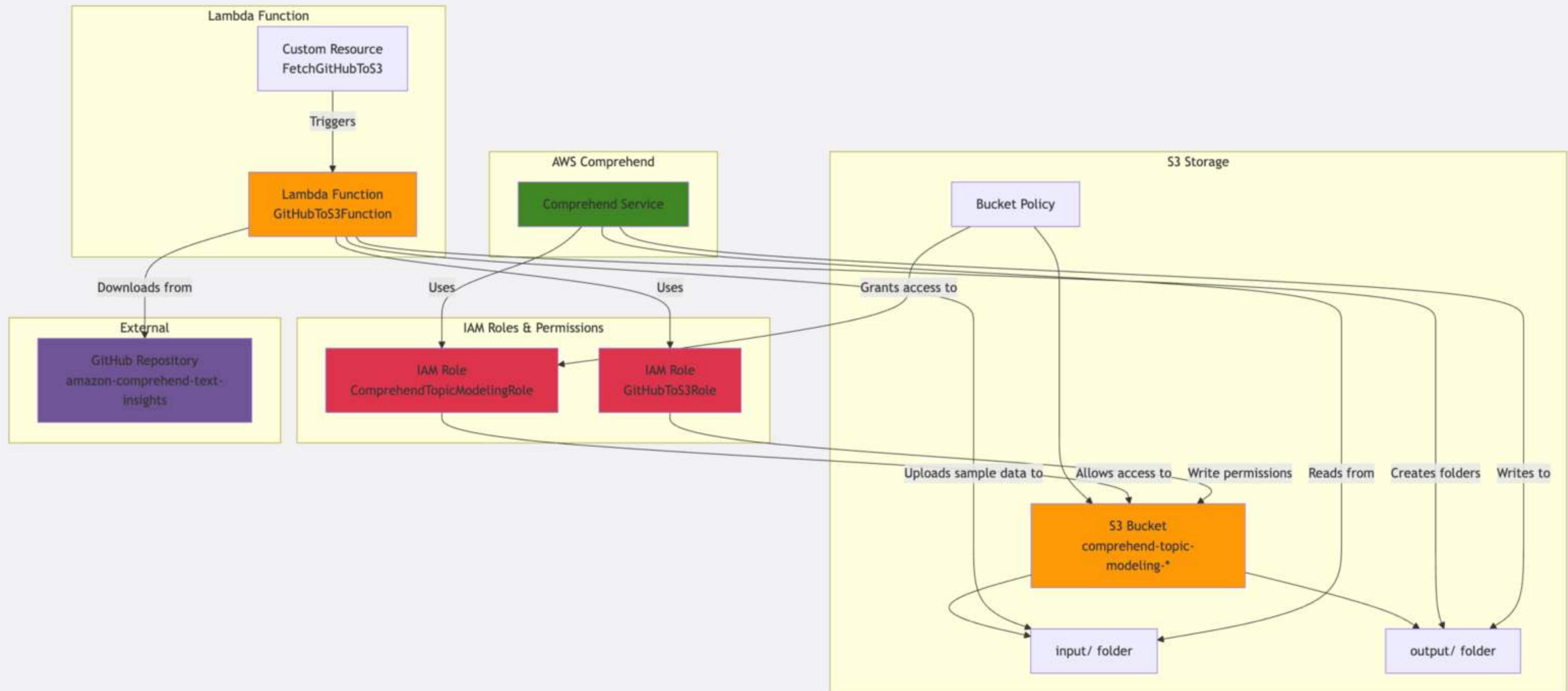
I

► Credits: 0.76 • Time: 1m 52s

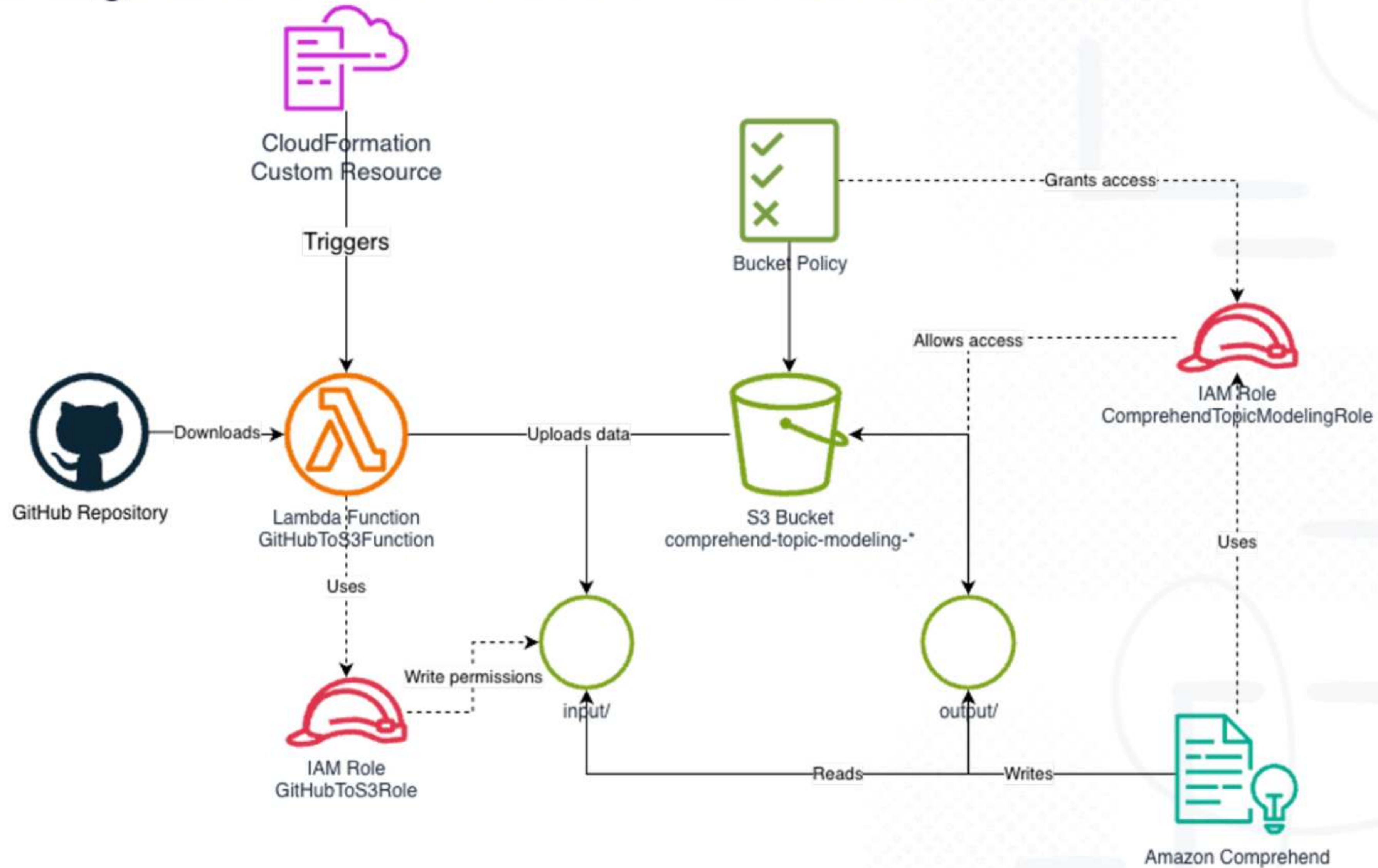
19% > █

The Diagram

AWS Comprehend Topic Modeling Infrastructure



The Diagram Converted to Draw.io Format



10. Learning Anything!

Give me simple step-by-step instructions for configuring a basic Lambda function that calls a foundation model in Amazon Bedrock. I want to access the function through API Gateway and the function must select the foundation model to use by referencing AWS AppConfig.

Use the latest AWS best practices, and assume I am working in a new AWS account with nothing pre-configured.



Cost Optimization Tips

1. **AppConfig:** First 4 configuration requests free, then \$0.0008 per request
 2. **Lambda:** First 1M requests/month free
 3. **API Gateway:** First 1M requests/month free (12 months)
 4. **Bedrock:** Pay per token (varies by model – Nova Lite is most cost-effective)
-

Troubleshooting

Error: "Could not find model"

- Verify model access is granted in Bedrock console
- Check model ID spelling and region availability

Error: "AccessDeniedException"

- Verify IAM role has Bedrock and AppConfig permissions
- Check Lambda execution role is correctly attached

AppConfig not updating

- Wait 30-60 seconds after deployment
- Check deployment status in AppConfig console

You now have a fully functional serverless API that calls Bedrock with dynamic model selection!

▶ Credits: 0.38 • Time: 1m 9s

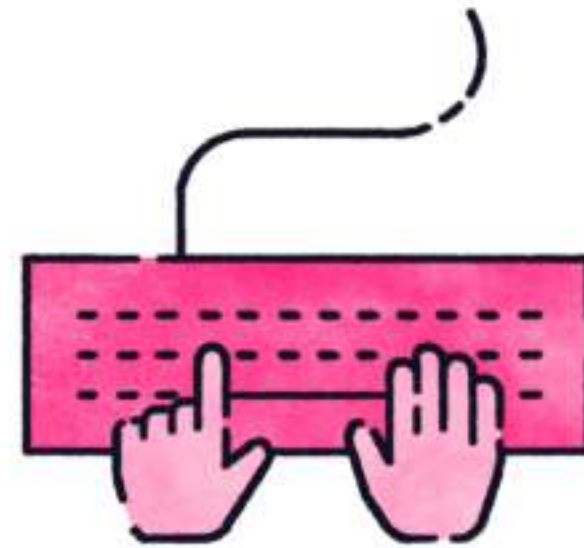
My Results

The Kiro CLI is a game changer



Significant time savings

Reduced time taken to create a course by 25-50%



Reduced context-switching

Searching documentation or multiple browser tabs



Preserves energy

Headspace to focus on creative parts of my role





Tech Roles are Changing



What Does this Mean for Engineers, Builders, and Developers?



Productivity gains

Preserve mental energy

Headspace to focus on other tasks

Shift in skillset, towards higher value tasks

Embrace progress, adapt, lean into areas that only a human can excel at!





Thriving with AI

Rising demand for builders who can work with AI

- Understand strengths and limitations
- Adapt quickly by learning relevant technologies
- Work effectively with new tools
- Bring context, ethics, and empathy to tech
- Blend AI with our expertise



My Challenge: Consider What could be Automated

Repetitive or long
winded tasks

How would you
describe the problem?

How could Kiro (or an
equivalent tool) help?



Experiment with AI in Your Daily Tasks

Start small, test on routine, low-risk tasks or in a sandbox environment

Compare AI output with your own to validate quality

Track your productivity gains

Share successful workflows with your team - record your successful prompts

Tools are continuously evolving so keep experimenting!





Resources



I Wrote an Article!

DEV Powered by Algolia



Did you know?

If you want to file an issue to the Q CLI team, just tell me, or run `q issue`

`/help` all commands • `ctrl + j` new lines • `ctrl + s` fuzzy search

You are chatting with claude-4-sonnet

Faye Ellis for AWS Heroes
Posted on Jun 25

Edit Manage Stats

3 ❤️ 1 🔥

10 ways I use the Amazon Q Developer CLI to save time

#ai #aws #coding tutorial

Kiro was Q Developer - the principles are the same!



Thank you for your time!

@fayecloudguru | <https://www.linkedin.com/in/fayeellis/>

