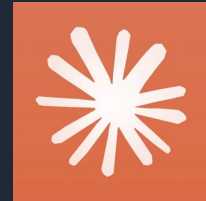


Comparative Guide to AI-Powered Dev Tools



AJ Barea

AI Coding Assistant Showdown

...

A Scenario-Based Comparison of [Amazon Q](#), [GitHub Copilot](#),
[Claude Code](#) & [Google Gemini CLI](#)

Agenda

AI Coding Foundations

- Motivation
- Why AI Coding Assistants?
- Overview of Tools

IDE Assistants: **Q** vs. **Copilot**

- Amazon Q
- GitHub Copilot
- Extensions Compared

CLI Showdown: **Gemini** vs. **Claude**

- Gemini CLI
- Claude Code
- CLI Comparison

Cost & Roadmap

- Benefits & Drawbacks
- Pricing & Subscriptions
- Activity
- Conclusions

Motivation

- Maintain flow-state with reduced context switching
- Detect and correct errors automatically
- Speed up development
- Learn at your own pace with 24/7 support

Why AI Coding Assistants?

- Developers waste time juggling multiple tools
- Centralize code help: answers, fixes & snippets
- Smart code completion, test generation, and bulk refactoring

DevTool Landscape

- Chatbots (ChatGPT, Claude, Gemini, DeepSeek, Grok, Qwen)
- IDE Extensions (Ask - Edit - Agent)
- AI-powered Code Editor (Windsurf, Cursor, Kiro)
- Command Line Interface Agents (OpenAI Codex)
- Asynchronous Agentic Coding Assistants (Google Jules, Codex)
- Model Context Protocol (LLM app ↔ external data and tools)

The IDE Revolution

- IDEs are now hotbeds for AI integration
- Developers want to stay in flow → minimize context switching
- AI assistants now answer questions, write code, fix bugs within IDE
- Major extensions: Amazon Q, GitHub Copilot, Tabnine, Gemini

From *Ask* to *Edit* to *Agent*

- Ask mode: Ask a question → get an answer
- Edit mode: Model can suggest or directly rewrite your code
- Agent mode: Full automation; model can run terminal commands, access files
- Agents only operate with human approval

AI-First Code Editors

- Cursor / Windsurf / Kiro
 - VS Code forks built for AI-native coding
- Built-in Copilot-like assistant with edit + agent modes
- No plugin setup; AI is baked into the editor
- Kiro was just released by AWS on July 14, 2025! (reqs, design, tasks)

Terminal Agents & the New Protocols

- CLI agents: Claude Code, Gemini CLI, Codex
- Work directly from your terminal; no IDE required
- Agents can scaffold, refactor, run tests, deploy
- Model Context Protocol (MCP): Open standard to connect AI with external tools + data



Amazon Q

AWS Generative AI Assistant

Amazon Q - What & Why

What

- AI assistant from AWS, embedded in Console, VS Code, JetBrains, and CLI
- Designed for developers, analysts, and contact-center workflows
- Built on Amazon Bedrock platform
- Reads your AWS setup for real-time, context-specific help

Why

- Speeds up research and troubleshooting using your own AWS context
- Ideal for AWS-heavy orgs with lots of services to manage
- Integrates naturally into the AWS Console UI
- Smart suggestions reduce back-and-forth with docs or support



COPILOT CODING AGENT



GitHub Copilot - What & Why

What

- AI pair-programmer built by GitHub and OpenAI
- Reads repo context and opens/updates GitHub issues + PRs
- Available in VS Code and JetBrains IDEs
- Supports visual input like screenshots

Why

- Automates boilerplate, testing, and refactoring
- Boosts productivity while maintaining human review control
- Deep GitHub integration (PR review, markdown summaries)
- Multiple AI models supported; switch between Anthropic, OpenAI, etc

GitHub Copilot on github.com

Type checking and Code Coverage #6 Edit <> Code

Merged ajbarea merged 35 commits into `main` from `dev` 5 days ago

Conversation 3 Commits 35 Checks 6 Files changed 72 +6,251 -3,297

ajbarea commented 5 days ago Owner

Write Preview

This pull request introduces several updates across the project, focusing on CI/CD improvements, enhanced type-checking, documentation updates, and new features for AWS resource management and frontend styling. Below is a summary of the most important changes:

Reviewers Copilot

Assignees No one—[assign yourself](#)

Copilot AI left a comment

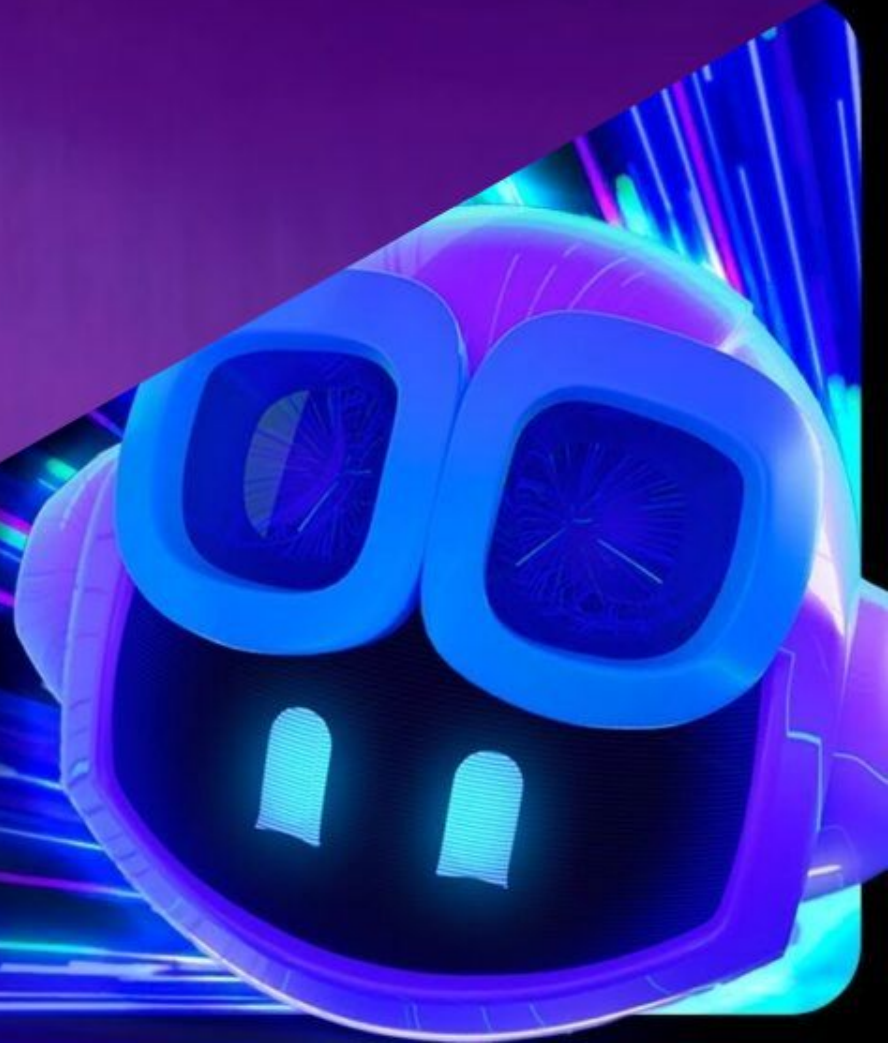
Pull Request Overview

This PR introduces comprehensive CI/CD and type-checking enhancements, refactors image processing to async with expanded test coverage, updates Terraform modules for AWS resource management, and enriches frontend authentication and styling.

- CI/CD & Type Checking: added `mypy`, pre-commit hooks, updated coverage/pytest settings.
- Async Support & Tests: converted download/upload logic to `aiohttp` and `pytest-asyncio`, expanded unit tests.
- Terraform & AWS Scripts: added `check_aws.sh`, refined Terraform modules (new variables, outputs, CORS rules).
- Frontend Improvements: enhanced authentication flows with detailed logging, styling, and dynamic language selection.

Reviewed Changes

Copilot reviewed 62 out of 72 changed files in this pull request and generated no comments.



VS Code Integration: Q vs. Copilot

● EASY

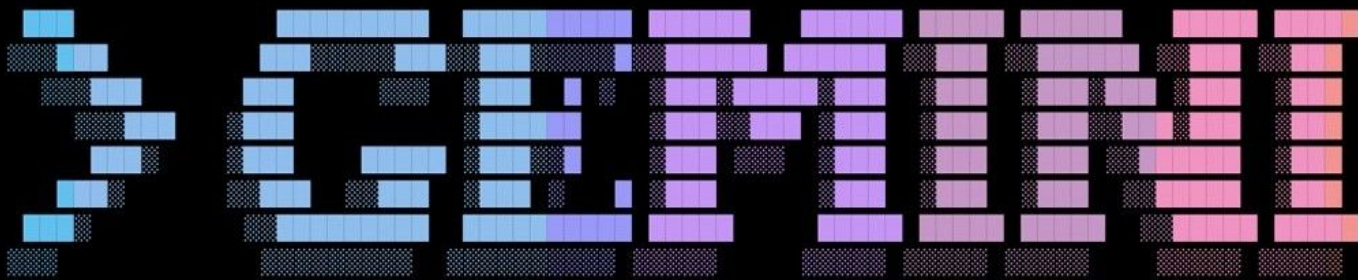
- ◆ Task: Generate a README with emojis
- ◆ Goal: Assess formatting, tone, context awareness

● MEDIUM

- ◆ Task: Generate unit tests for an existing Python function
- ◆ Goal: Test code comprehension, edge case handling, and test quality

● HARD

- ◆ Task: Inject a bug → test resolution
- ◆ Bug: Type mismatch or async error
- ◆ Goal: Evaluate problem diagnosis and proposed fix quality



Tips for getting started:

1. Ask questions, edit files, or run commands.
2. Be specific for the best results.
3. Create **GEMINI.md** files to customize your interactions with Gemini.
4. **/help** for more information.

> Tell me about you, what are you best at?

✦ I am a Gemini agent specialized for software development tasks in your command-line interface.

I am best at:



Google Gemini CLI - What & Why

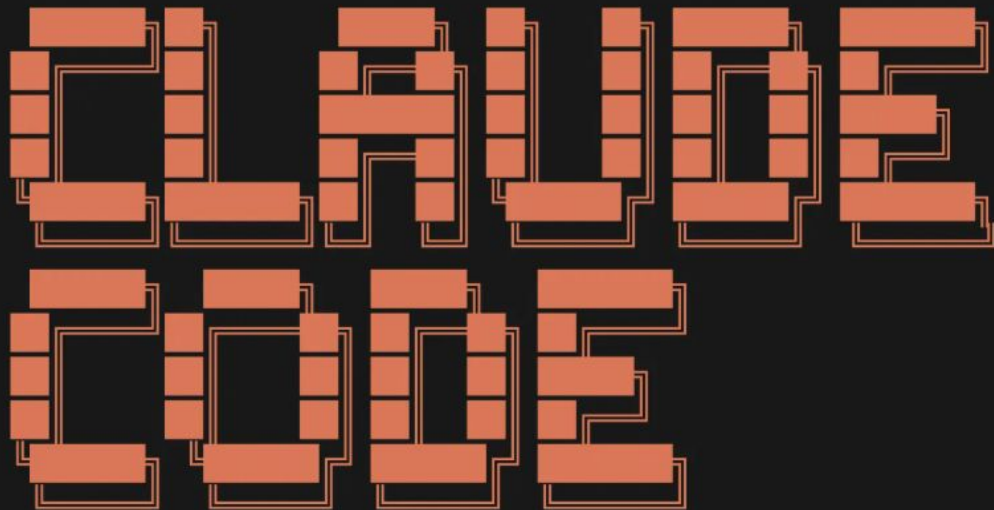
What

- Open-source CLI agent powered by Gemini 2.5 Pro
- Follows a ReAct (Reason + Act) loop for multi-step tasks
- Works directly from the terminal
- Can scaffold, edit, test, and deploy apps

Why

- No IDE or plugins required; just use your shell
- Excellent for power users, automation, and quick experiments
- Open-source and free: 1,000 requests/day, 60 requests/min
- Cost-effective way to explore high-powered AI workflows

* Welcome to Claude Code



Press **Enter** to continue

ANTHROPIC

Claude Code - What & Why

What

- Terminal-based agent for AI coding
- Ingests full repo context (structure, semantics, tests)
- Suggests edits, fixes, and improvements automatically
- Automates GitHub actions like PR creation and bug triage

Why

- Reduces manual setup: no file picking or context setup required
- Boosts onboarding, testing, and refactoring workflows
- Prioritizes AI safety and reliability with strong Anthropic guardrails
- Designed for devs who want full-codebase understanding



ANTHROPIC

> GEMINI

CLAUDE

CODE

CLI Integration: Claude Code vs. Gemini CLI

EASY

- ◆ Task: Generate a documentation plan for Catcher
- ◆ Goal: Assess ability to spin up clear project objectives, architecture overview, and milestones

MEDIUM

- ◆ Task: Draft a user guide for Catcher
- ◆ Goal: Test clarity in explaining controls (mouse + A / D keys), scoring, and how to play

HARD

- ◆ Task: Build a fully playable Catcher game in Pygame
- ◆ Goal: Evaluate multi-file generation, graphical logic, input handling, scoring, and game loop creation

AI Coding Agents: Benefits & Drawbacks

Pros

- Get more work done in less time
- Speed up development and save money
- Produce more consistent, higher-quality code
- Make it easier for beginners to start coding
- Help developers learn new skills and grow roles
- Create new specialist roles around AI tools

Cons

- Fewer jobs for new developers
- Harder to train and find fresh talent
- Newcomers struggle to build real experience
- Tougher competition and bigger skill gaps
- Relying too much on AI can weaken our own abilities
- AI code could introduce vulnerabilities or expose sensitive data

Pricing Comparison

<i>Tool</i>	<i>Free Tier</i>	<i>Release Date</i>	<i>Student Perks</i>
GitHub Copilot	2,000 code completions / month	Jun 2021	Free GitHub Copilot with Student Developer Pack
Amazon Q Developer	1,000 lines of code / month	Apr 2024	—
Claude Code	N/A (\$20 / month)	Feb 2025	—
Gemini CLI	1,000 requests / day	Jun 2025	—

Gemini CLI is the only **open source** AI agent here and has the **largest free limit** – 60 requests per minute and 1,000 a day!

60
Model requests
per minute

1K
Model requests
per day

Open
Source

Available free-of-charge

Activity Overview

Mastering AI Assistants

- Goal: Use Q, Copilot, Gemini CLI, and/or Claude Code
- Time: 20 min
- Outcomes: prompt design, auto complete, refactoring, test generation, bug fix, etc



Activity Setup / Installation

- Extension install and access
- AWS CLI / npm / pip
- Access keys
- Step-by-step scaffolded instructions

Hands-on Activity

1. Install your tool of choice
2. Generate a Lambda function that utilizes s3
3. Generate logging and test suite for it
4. Get all tests passing
5. Check AWS console s3 and Lambda
6. *Bonus*: Inject their own bug into the code and see if the AI can fix it

Conclusions

- Personal reflections
 - Surprises, “aha” moments
 - Vibes: Claude is king; Kiro is the future
- Speed & consistency  | Dependence & skill erosion 
- Job-market relevance
 - Some companies are openly **reducing junior dev** **highers**
 - There is new growing demand for **AI-fluent engineers**

Resources

Amazon Web Services

- Amazon Web Services. (n.d.). Amazon Q. Retrieved from <https://aws.amazon.com/>
- Amazon Web Services. (n.d.). Amazon Q Business. Retrieved from <https://aws.amazon.com/>
- Amazon Web Services. (n.d.). Amazon Q in Amazon Connect. Retrieved from <https://aws.amazon.com/>
- Amazon Web Services. (2024, November 22). Amazon Q: Revolutionizing Business Productivity with AI-Powered Assistance [Video]. AWS TV. Retrieved from <https://aws.amazon.com/>
- Amazon Web Services. (2024, June 28). Amazon Connect Administrator Guide: Tutorials. Retrieved from <https://docs.aws.amazon.com/>
- Amazon Web Services. (2024, June 28). What is Amazon Q Developer? Retrieved from <https://docs.aws.amazon.com/>
- Amazon Web Services. (2024, April 3). Amazon Q VS Code Extension. Retrieved from <https://marketplace.visualstudio.com/>
- Amazon Web Services. (n.d.). Amazon Q Developer Pricing. Retrieved from <https://aws.amazon.com/>

GitHub

- GitHub. (n.d.). GitHub Copilot Pricing Plans. Retrieved from <https://github.com/>
- GitHub Education. (n.d.). GitHub Student Developer Pack. Retrieved from <https://education.github.com/>
- GitHub. (n.d.). Choosing the right AI model for your task. GitHub Docs. Retrieved July 20, 2025, from <https://docs.github.com/>

Anthropic

- Anthropic. (2023, December 20). Core views on AI safety. Retrieved July 20, 2025, from <https://www.anthropic.com/>
- Anthropic. (2024, February 6). Anthropic Fellows Program. Alignment Research at Anthropic. Retrieved July 20, 2025, from <https://alignment.anthropic.com/>
- Anthropic. (n.d.). Model Context Protocol. Retrieved from <https://www.anthropic.com/>
- Anthropic. (n.d.). Pricing. Retrieved from <https://www.anthropic.com/>

Google / AWS

- Google. (2025, June 25). Gemini CLI: Your open-source AI agent. Retrieved from <https://blog.google/>
- Kiro. (n.d.). Kiro — AI productivity tools for developers. Retrieved July 20, 2025, from <https://kiro.dev/>