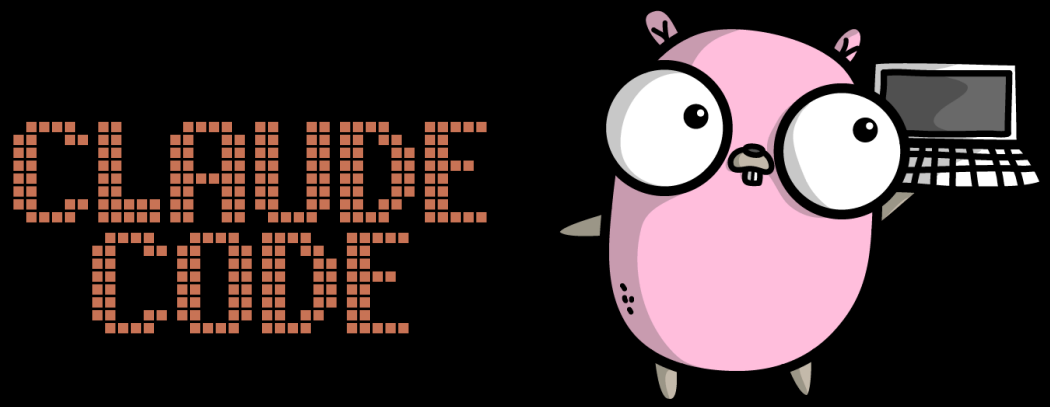
Accelerating Go Development with Claude Code



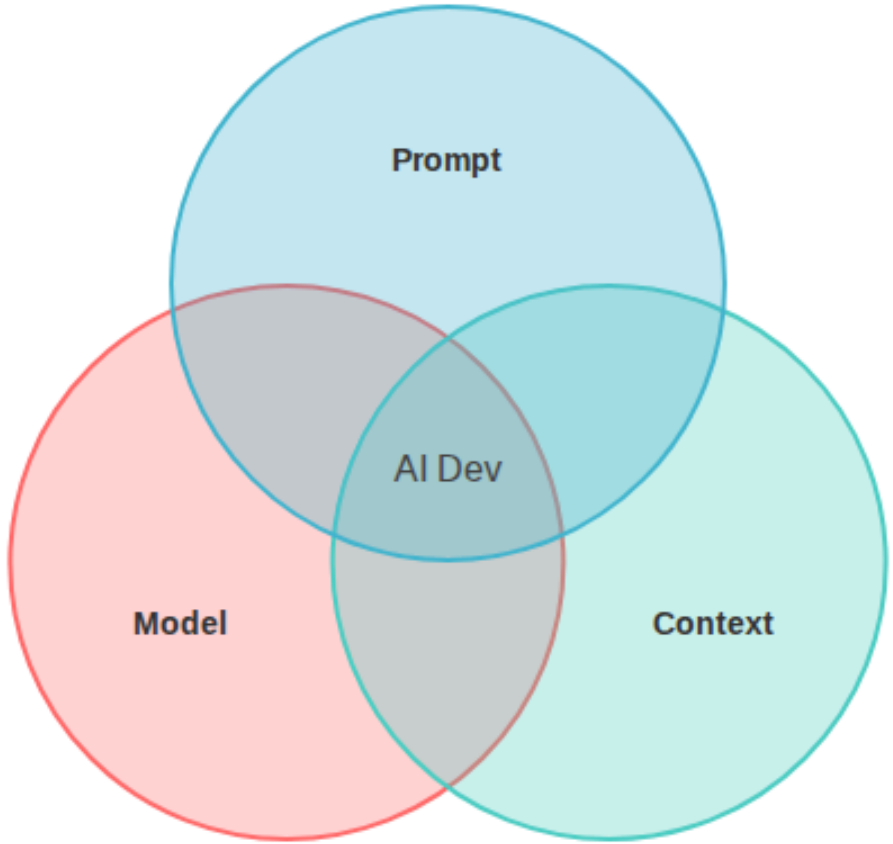
Wojciech Barczynski

Development with AI

- AI boosts productivity.
- Tools and models evolve rapidly.
- The challenge is to find what works.

Goal

- Share a pragmatic AI workflow for Go development.
- Discuss effective strategies and tools.


Prompt
AI Dev
Model
Context

+ Tools

Models

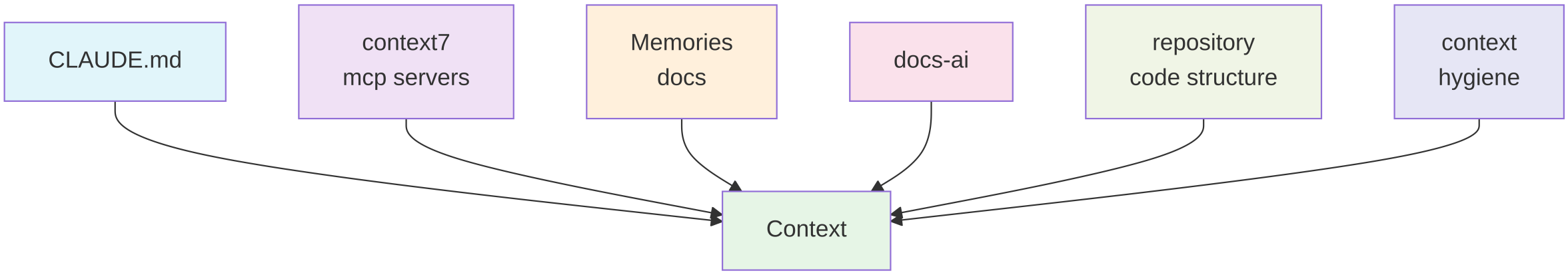
- Anthropic models lead
- `claude` → better results
- Cut-off - march 2025

Models

Models have strengths and weaknesses:

- Claude Code
- Gemini

Context


CLAUDE.md
context7
mcp servers
Memories
docs
docs-ai
repository
code structure
context
hygiene
Context

CLAUDE.md

- Keep it up-to-date.
- Update it when new features are added.
- Create a command for easy updates.

CLAUDE.md

For Go-specific context, include:

- Project coding conventions.
- Go design patterns, with examples (e.g., for error handling).

Plan.md

- Keep the model on the track
- When it double, create it
- MUST for anything more complicated
- Benefits for the model

context7 mcp

- Fetches on-demand documentation and code snippets.
- Additionally:
  - Add links to prompts.
  - Add information to `memory/`.
  - Or save to `docs-ai/`.

.claude/memory

Memory (`.claude/memory`):

- Convention, not automatically read (docs).
- Use for one-off prompts (e.g., `migration_sqlite_to_psql.md`).
- Store best practices.
- Save prompts for future use (e.g., `memory-template`).

docs-ai / ai-docs

- More extensive docs and larger mds.
- You can link them in `CLAUDE.md`.

Repository

- Modular design
- Vertical project structure
- `CLAUDE.md` files in subfolders

Context

```
Read .claude/memory/* and ... use command ...
```

context hygiene

Once the task is complete or a session is too-long:

- Save any essential information
- Clear the context using the `/clear` command
- `git worktree` for isolated environments
- `/context`

Prompt for Claude Code

- The CLEAR Framework
- Keywords, e.g., exactly, detaile, ...
- Role-task format pattern

```
You are a [ROLE] with expertise in [DOMAIN].
Your task is to [SPECIFIC_ACTION].
```

The CLEAR Framework

- Context: Background information
- Limitations: Constraints and boundaries
- Examples: Sample inputs/outputs
- Action: Specific task to perform
- Result: Expected deliverable format

1. Task context

2. Tone context

3. Background data, documents, and images

4. Detailed task description & rules

5. Examples

6. Conversation history

7. Immediate task description or request

8. Thinking step by step / take a deep breath

9. Output formatting

10. Detailed response (if any)

Will help:

- Good to watch 1-2 videos about prompt engineering
- prompt optimizer at claude.ai
- Claude can review your prompts as well.

Claude Code

- `ESC`: Provide additional information.
- `ESC` `ESC`: Cancel the current action.
- **Planning Mode**: Deconstruct complex tasks into smaller steps.

Claude Code Tools

- **Hooks**: Customize behavior with pre/post-action scripts.
- **OpenTelemetry**: Integrated for observability and performance monitoring.
- `ccusage`: CLI tool to track token usage and costs.

Choosing Your Tools

How I approach it:

1. **CLI Tools (`gh`, `eza`, ...):** Fast and efficient for common tasks.
2. **Python Scripts (with `uv`)**: Best for automation and complex logic.
3. **Mcp** few use cases.

Go-Specific

Claude benefits from Go's rapid feedback loop:

- **Strongly-typed language**: Catches errors before runtime.
- **Strict formatting**: Enforced by tools like `gofmt` and `golangci-lint`.

I typically use Claude hooks to automate these checks.

Accelerating Go Development

- Continuous Process

Accelerating Go Development

- Share the learnings with your team
- e.g., AI retrospectives

Accelerating Go Development

- More verticals in your app, the easier for the model

Accelerating Go Development

- Model
- Context
- Prompt
- Tools

Demo → Claude

github.com/wojciech12/talks & wbarczynski.pl

Thank you

Backup Slides

Prompt Enginering

- Prompt Best Practices
- Prompt library
- CO-STAR