



AI Techniques for NetOps, NetEng, and more

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The Talk

- Why me?
- Starting Points / Big Ideas
- How AI tool use is evolving
- LLMs as Thought Partners
- Things to consider
- Go and Try

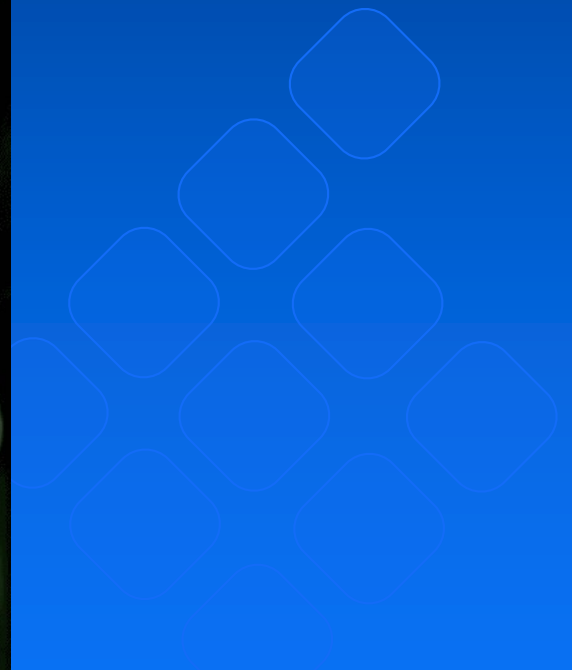


Big Ideas to Start With

- NetOps is downstream from SW Dev and Distribution
 - Uhm... NetDevOps
- AI is a form of SW Dev
 - Therefore, it makes sense to pay attention to it
- New powerful AI tooling and techniques provide opportunity to think like an Architect
 - Alternatively: Systems Thinking, Manager, Agent Boss
- My goal: find useful, rational adoption of AI tooling

A Biased View of AI Progression

- Chat One-Shots
- Git for my prompts
- Vibe coding: useful, but use the right tool for the right job
- Harnesses, API keys, and Agents
- Spec Driven Development (SDD)
- Beyond SDD, other approaches
 - Test Driven Design (TDD)
 - Other approaches we haven't even thought of yet



Chat and Vibe Use Cases You Can Try Today

USE CASE

Packet capture
summarization

USE CASE

Log analysis
(cross-domain)

USE CASE

Python generation
Config generation

USE CASE

MOP improvement

USE CASE

Incident
summarization

USE CASE

Documentation
generation /
cleanup



General Techniques You Can Apply

- Think of LLMs as Thought Partners
- Let a model interview you
- Ask "What am I missing?"
- LLM as a patient tutor
- Applying a "thought harness": SDD

Spec-Driven Development (SDD): Requirements, Guardrails, Contracts

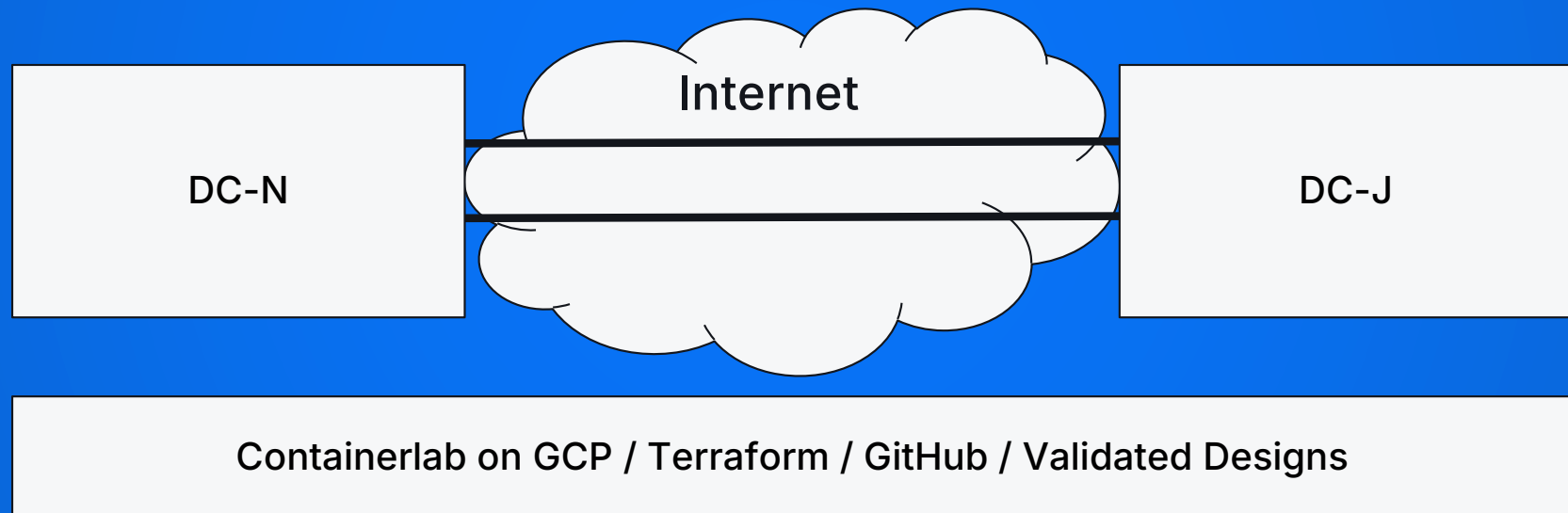
- **Not new:** Product Management perspective for software products
 - <https://www.ibm.com/think/topics/spec-driven-development>
- **Main idea:** writing intent, constraints, acceptance criteria, and tests before building
 - spec.md: Defines the detailed requirements and "what" is being built.
 - plan.md: Outlines the technical implementation details and "how" the requirements will be met.
 - asks.md: Breaks the plan into actionable, numbered steps for an AI agent to execute.
 - constitution.md: Establishes core project principles and architectural "DNA" that every implementation must follow.
- **In a sense, it's a different kind of harness**

SLAB: A Real SDD Example

Use SDD to define and build network test environment.

Six rounds of useful questions,
design repo development,
image creation,
IAC and configs,
and useful outputs.

SLAB Target Topology



Considerations and Implications



Don't let bad first experiences with AI define
the technology for you

Scarcity/Abundance mix is changing:

Coding/Creating: Scarce -> Abundant

Review: Abundant -> Scarce

You own your slop. Deal with it.

(Seriously)

Be a ruthless reviewer

Seek Model Diversity:

Do not get single-threaded on an LLM,
harness, or frontier model provider

Systems are emerging that are hybrids of both traditional/deterministic and new/probabilistic techniques

Find and leverage the right mix

Trust building

- Most critical item / not enough attention on it
- No new tech gets deployed in production without proving value and reliability
- An intentional process - not inherent or assumed
- Deliberately build into POCs, early deployments, and production criteria

ROI for AI

- There is tension/interplay between:
 - The additional work that it takes me to leverage the harness, and...
 - The time that we actually save (if any), and...
 - The new things we can do that we couldn't before
- Other impactful economic factors
 - Token pricing
 - Running models locally (OpEx versus CapEx)
 - More efficient and specialized models
- This will likely take time to evolve
 - Check back in 12-15 months
- Looking for good studies on this, and data points from NetOps practitioners

Things You Can Try

Pick a safe but useful workflow
(MOP review, Incident summary,
Documentation cleanup, other)

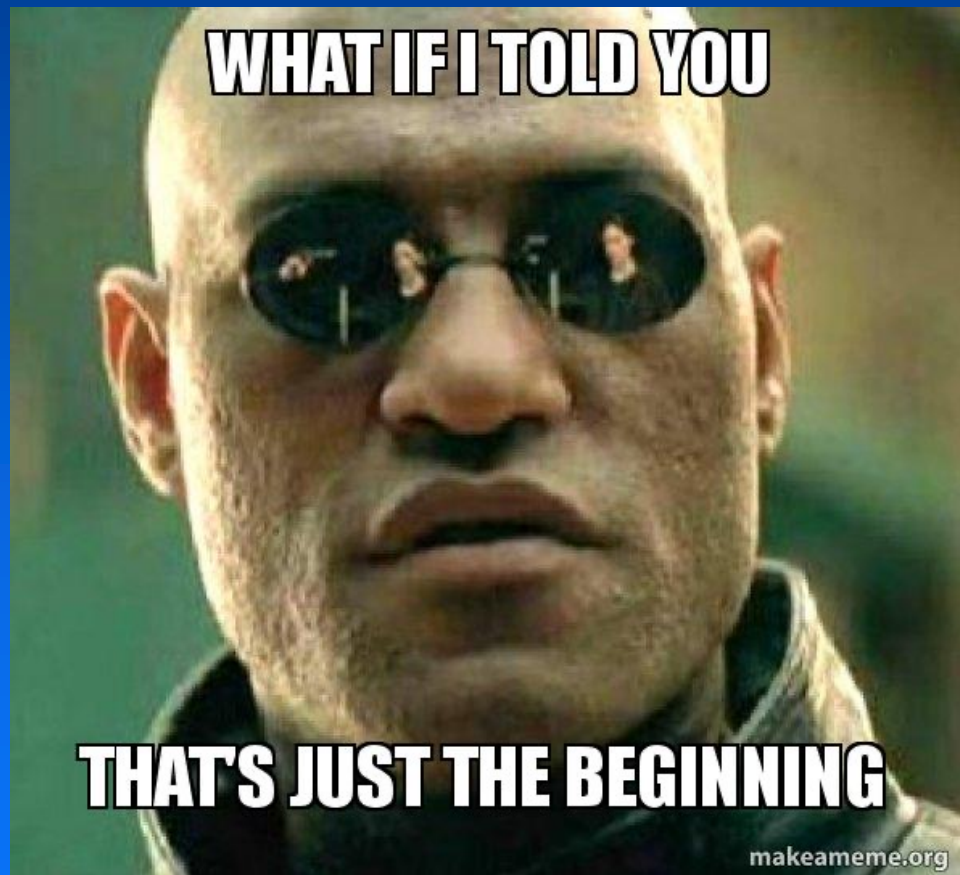
Try at least two harnesses
(Claude Code, OpenAI Codex, etc.)

Get to know SDD. Get good at being
specific, and let an LLM help

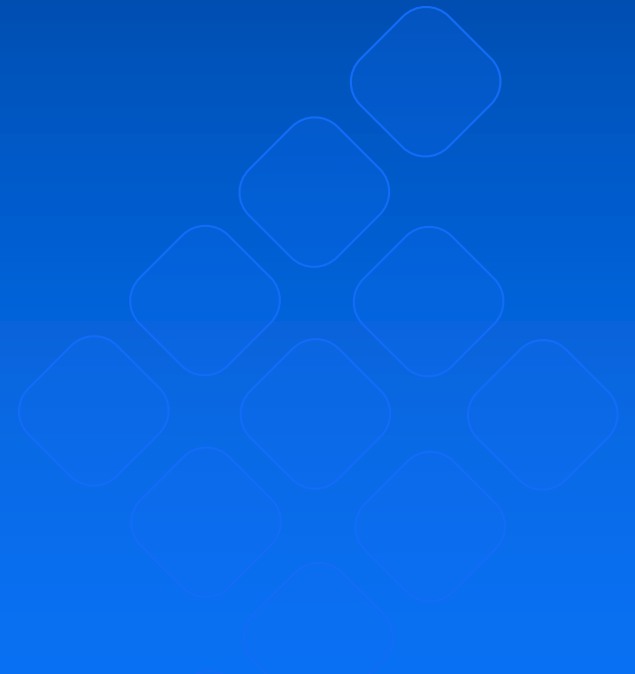
Develop an AI POC with clear
success criteria; solve a real problem

Create a team rule of thumb: AI may
draft; Humans approve; Production
changes require clear signoff





Questions?



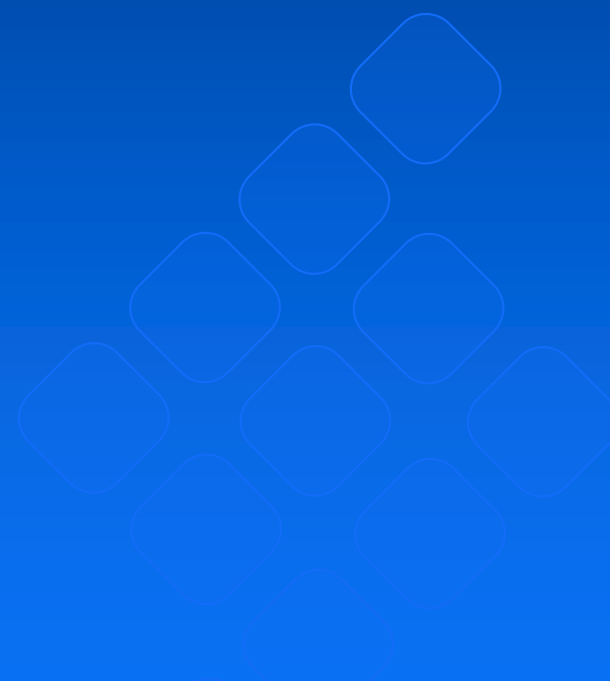


Thank you!

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Local LLMs: Recommended Resources

- William Collins
 - <https://www.linkedin.com/in/william-collins/>
- Ned Bellavance
 - <https://www.linkedin.com/in/ned-bellavance/>
- Keith Townsend
 - <https://www.linkedin.com/in/kltownsend/>
- John Capobianco
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