

**I've been in love with
coding for 23 years.**

November 30, 2022

Brainfuck

Article [Talk](#)

From Wikipedia, the free encyclopedia

Brainfuck is an [esoteric programming language](#) created in 1993 by Swiss student Urban Müller.^[1] Designed to be extremely minimalistic, the language consists of only eight simple commands, a [data pointer](#), and an [instruction pointer](#).^[2]

+++++++ [>++++ [>+>++++>++++>+<<<<-]>+>+>->>+ [<] <-]>>.>--
- .+++++++ . .++ .>> .<- .< .+++ .----- .----- .>>+ .>+ .

Here is a possible implementation of Tic-tac-toe in Brainfuck:

Copy code

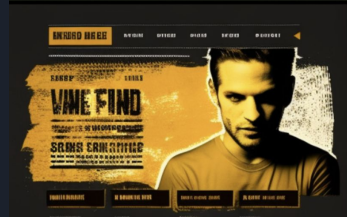
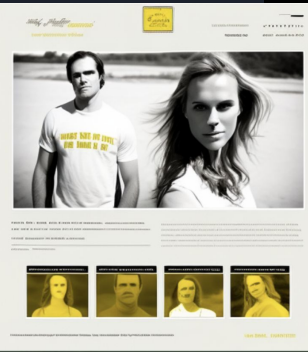
```
>+++++++[-<+++++++>]<.>>[->[-]<]<<<<.>-.>-.>+++++. .+++>.-.
<<+>.>++++.-----.
```

```
ReactJS | HTTP | Lambda | DynamoDB | DynamoDB
frontend | Request | Python | Query | Persistence
deployed | -----> | backend | -----> |
|
| deployed |
|
| in AWS |
```

```
| Authentication |
|
+-----+-----+
|
+-----V-----+
|
| AWS SNS |
|
+-----+-----+
```

```
|
| User Manager |
|
+-----+-----+
|
|
+-----V-----+
```

```
|
| AWS DynamoDB |
|
+-----+-----+
```



Certainly! Here's the HTML code for a Bootstrap-styled select input with the top 30 well-known painters, with the option values prefixed with "by " and the painters listed in order of most well-known first:

```
<div class="form-group">
  <label for="painters">Select a painter:</label>
  <select class="form-control" id="painters">
    <option value="by Vincent van Gogh">Vincent van Gogh</option>
    <option value="by Claude Monet">Claude Monet</option>
    <option value="by Rembrandt">Rembrandt</option>
    <option value="by Paul Cézanne">Paul Cézanne</option>
    <option value="by Salvador Dali">Salvador Dali</option>
    <option value="by Pablo Picasso">Pablo Picasso</option>
    <option value="by Henri Matisse">Henri Matisse</option>
    <option value="by Frida Kahlo">Frida Kahlo</option>
    <option value="by Vincent van Gogh">Vincent van Gogh</option>
```



idea



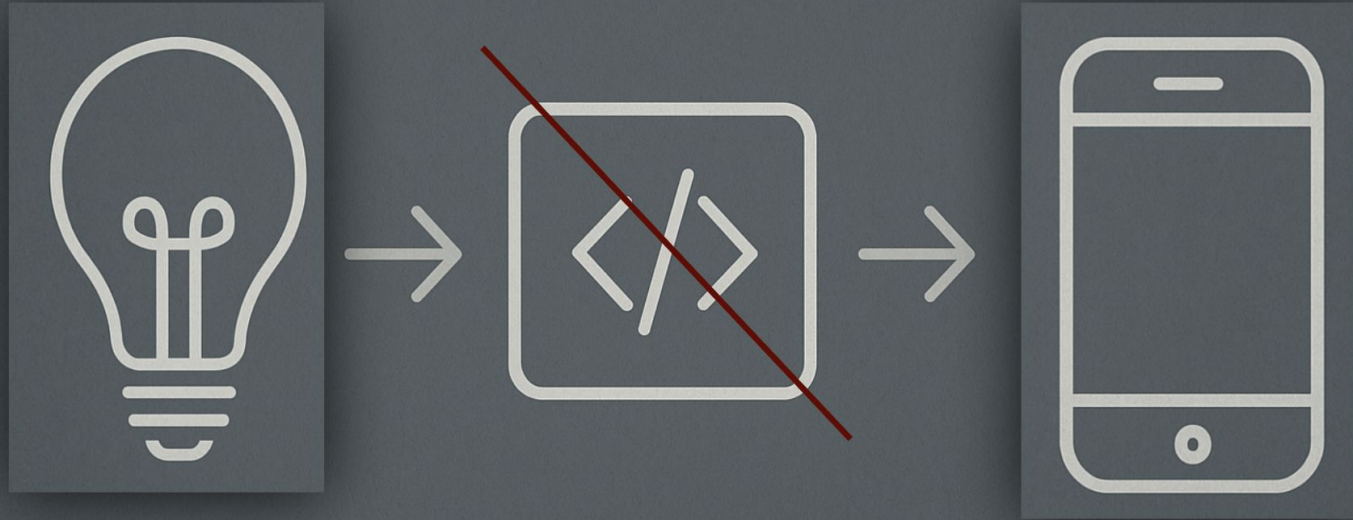
code



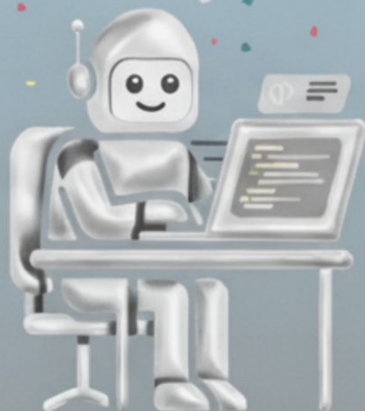
app



I never liked writing code.



I love building apps.



**AI: WRITES THE CODE
(BORING)**



**HUMAN: DOES THE
COOL TASKS!**

Agentic Flows: How LLMs Will Reroute the Future of Networks



Viorel Spînu

AI Enabler

Welcome to

1966

```
EEEEEE LL      IIII  ZZZZZZ  AAAAA
EE      LL      II     ZZ     AA   AA
EEEEEE LL      II     ZZZ    AAAAAA
EE      LL      II     ZZ     AA   AA
EEEEEE LLLLLL IIII  ZZZZZZ  AA   AA
```

Eliza is a mock Rogerian psychotherapist.

The original program was described by Joseph Weizenbaum in 1966.

This implementation by Norbert Landsteiner 2005.

ELIZA: Is something troubling you ?

YOU: Men are all alike.

ELIZA: What is the connection, do you suppose ?

YOU: They're always bugging us about something or other.

ELIZA: Can you think of a specific example ?

YOU: Well, my boyfriend made me come here.

ELIZA: Is it important to you that your boyfriend made you come here ?

YOU: He says I'm depressed much of the time.

ELIZA: I am sorry to hear that you are depressed.

YOU: It's true. I am unhappy.

ELIZA: Can you explain what made you unhappy ?

YOU:

1

1950: Turing's Vision

"Computing Machinery and Intelligence"

2

1954: Georgetown-IBM

First machine translation

Russian → English

60 sentences, 250 words

3

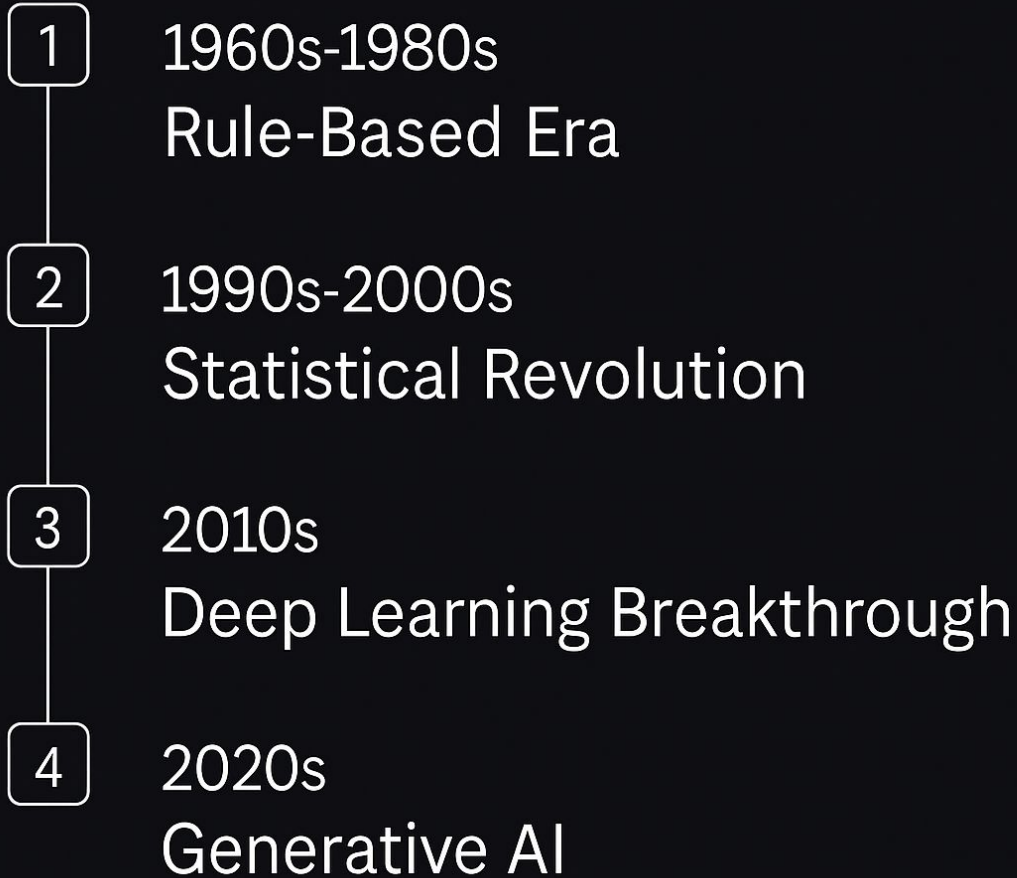
The Bold Prediction

"Solved in 3-5 years"



"Can machines think?"

- Alan Turing, 1950



What's behind the 2025 LLM?

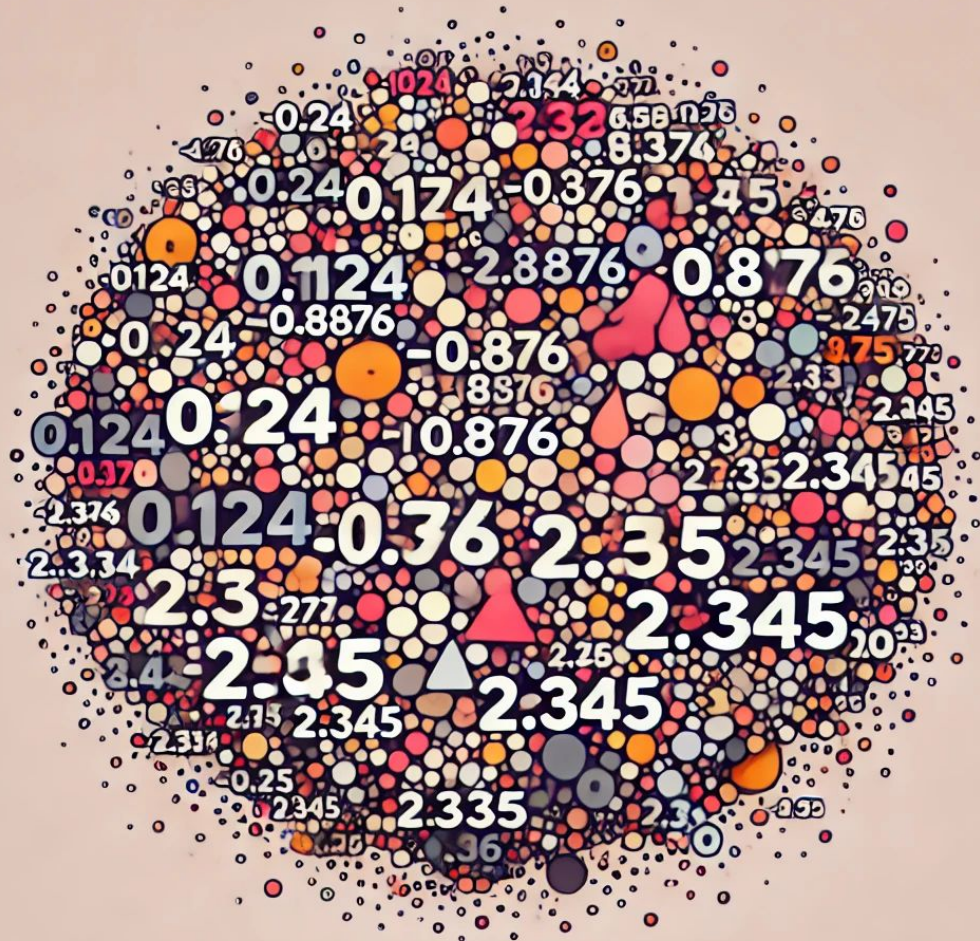


It's not a database!



It's not THE Overlord!





1024

2344

277

-0.24

24

2.32

6.58

1125

476

0.24

0.174

-0.376

8.374

45

6476

0124

0.1124

2.8876

0.876

2475

0.24

-0.8876

-0.876

875

778

8376

0.124

0.24

-10.876

2.145

0.376

2.35

2.345

45

2.376

0.124

-0.36

2.35

2.345

2.35

2.334

2.3

277

2.345

2.345

20

3.4

2.35

2.25

2.345

20

23

2.334

-0.25

2.345

2.335

2.3

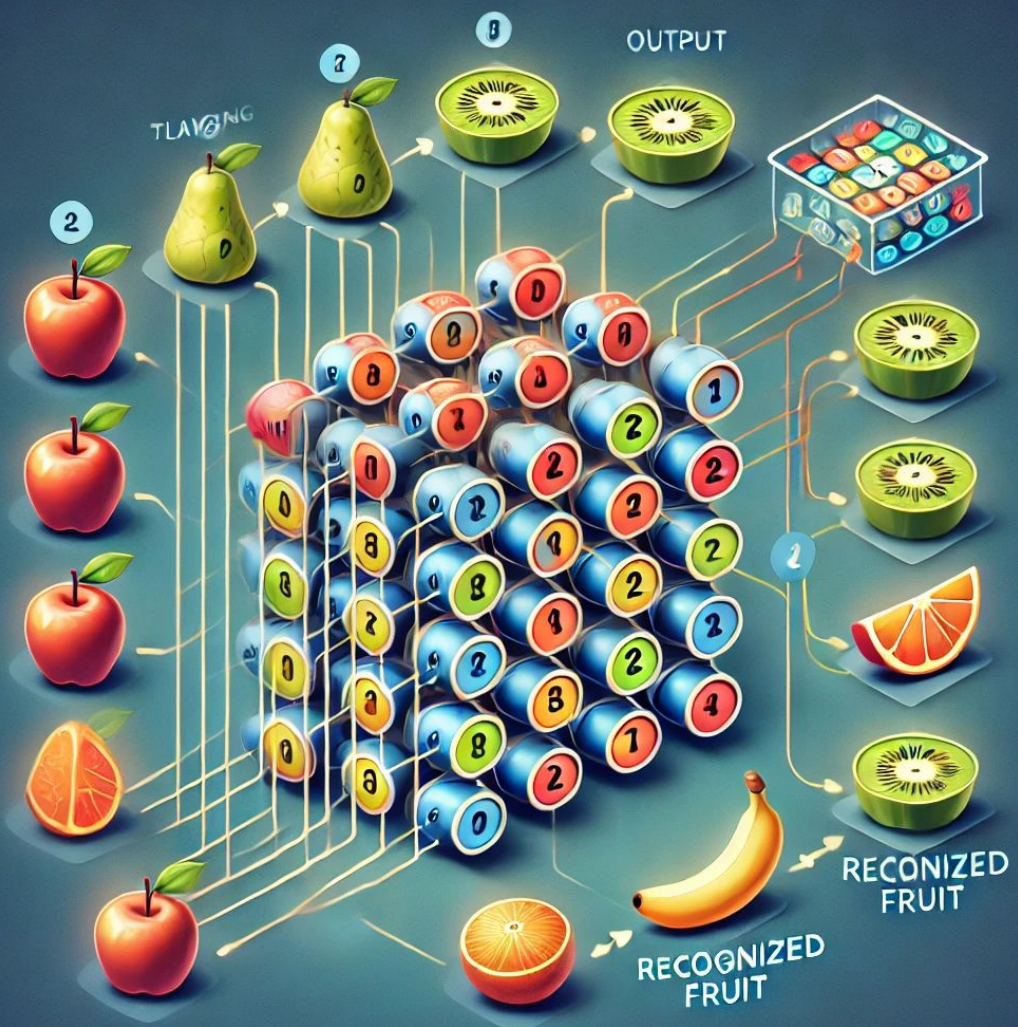
199




2.36

2.3

0





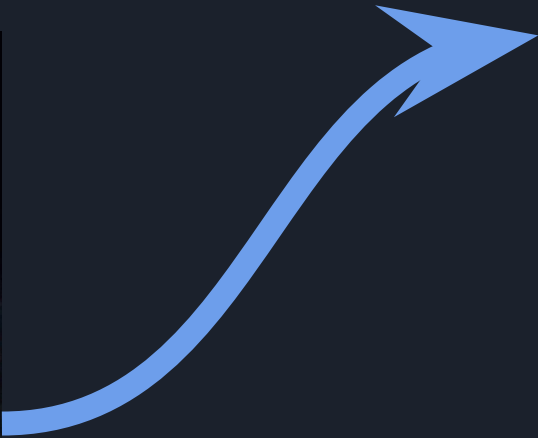
	shape	size	color	
	1.3	5	4	
	2	1	7	
	1	4	2	







The bird flew over the _____









AI has designed bacteria-killing proteins from scratch – and they work

An AI was tasked with creating proteins with anti-microbial properties. Researchers then created a subset of the proteins and found some did the job

This article has been viewed 6278 times in the last 24 hours.



TECHNOLOGY 26 January 2023

*"Draft a policy explaining why bringing
emotional support tarantulas to team
meetings requires 48-hour advance notice"*

Draft a policy

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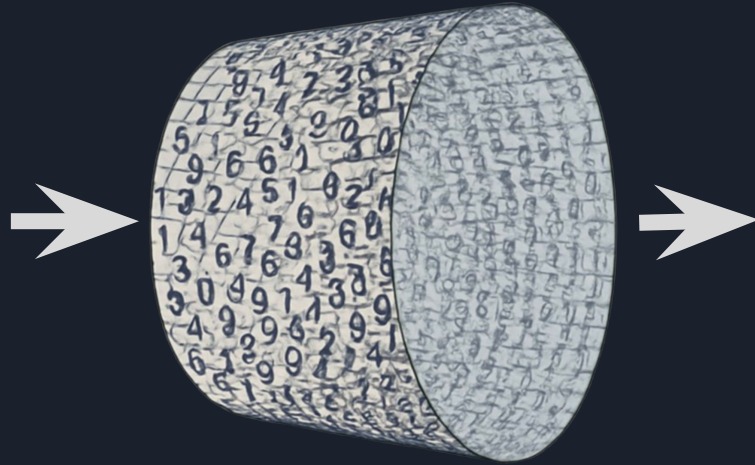
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**48-hours
attendance notice**



Draft a policy

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**48-hours
attendance notice**



Purpose:

Draft a policy

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48-hours
attendance notice

Purpose:



Establishing

Draft a policy

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48-hours
attendance notice

Purpose:
Establishing



guidelines

Draft a policy

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48-hours
attendance notice

Purpose:
Establishing
guidelines



for

PURPOSE:

Establishing guidelines for emotional support tarantulas in meetings.

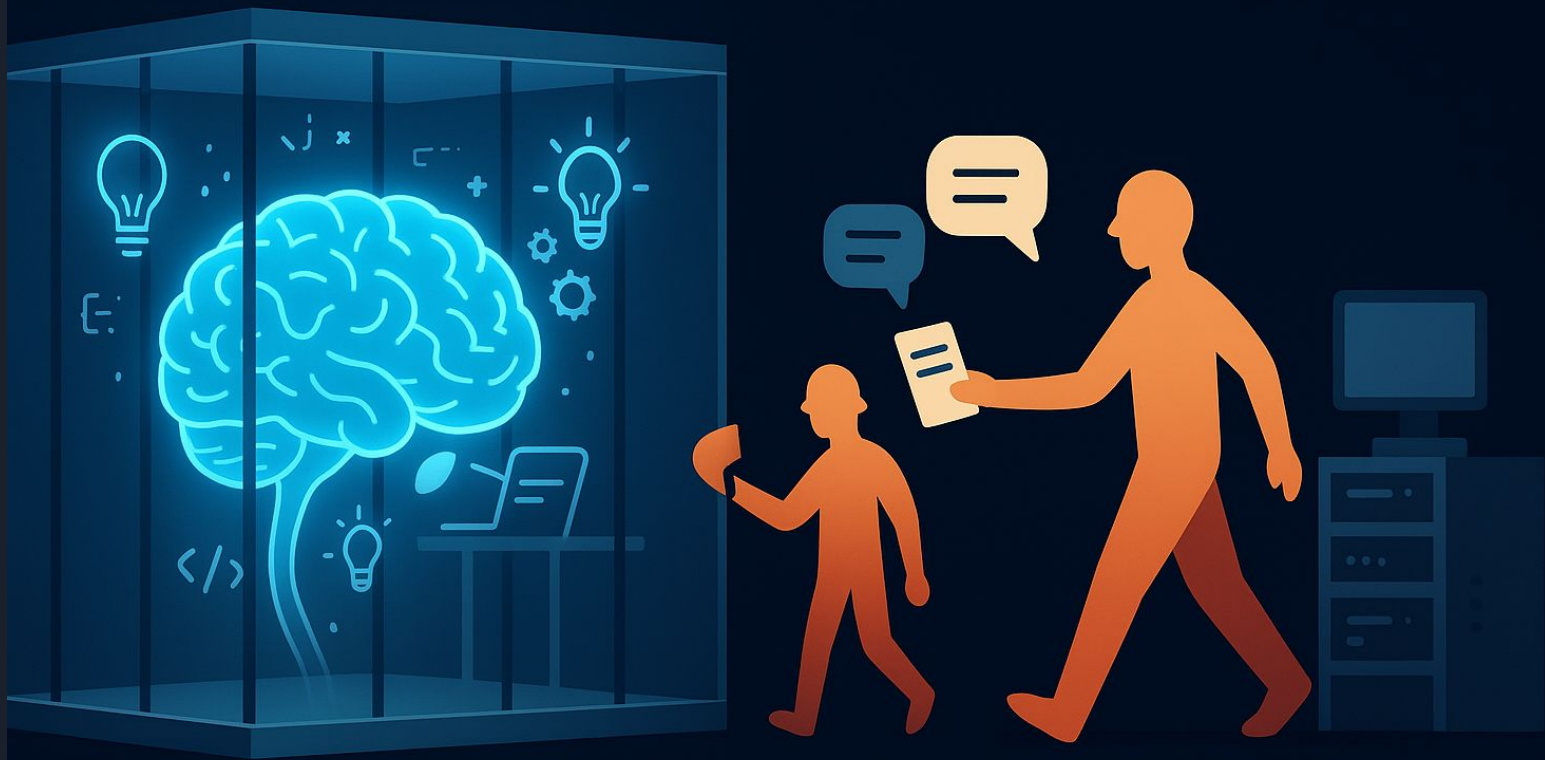
KEY REQUIREMENTS:

Submit "Arthropod Attendance Form" (TAR-22) via intranet.

TARANTULA ETIQUETTE:

No web construction during presentations.

the lonely LLM



ChatGPT: "Install packages. Run *this npm*"

Human: [COPY imports → PASTE] [COPY npm command → PASTE in terminal]

ChatGPT: "Create database config and .env file:"
[generates db.js + .env]

Human: [COPY db.js → CREATE file → PASTE] [COPY .env → CREATE file → PASTE]

Human: "Help me troubleshoot connectivity to site.com"

ChatGPT: "Run this: *traceroute site.com*"

Human: *[copies, runs, waits, pastes output back]*

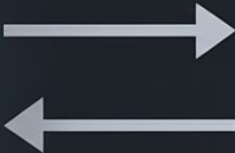
ChatGPT: "I see packet loss at hop 7. Now run: *mtr -c 100 site.com*"

Human: *[copies, runs, waits 100 packets, pastes back]*

ChatGPT: "Check BGP routes: *show ip bgp 203.0.113.0/24*"

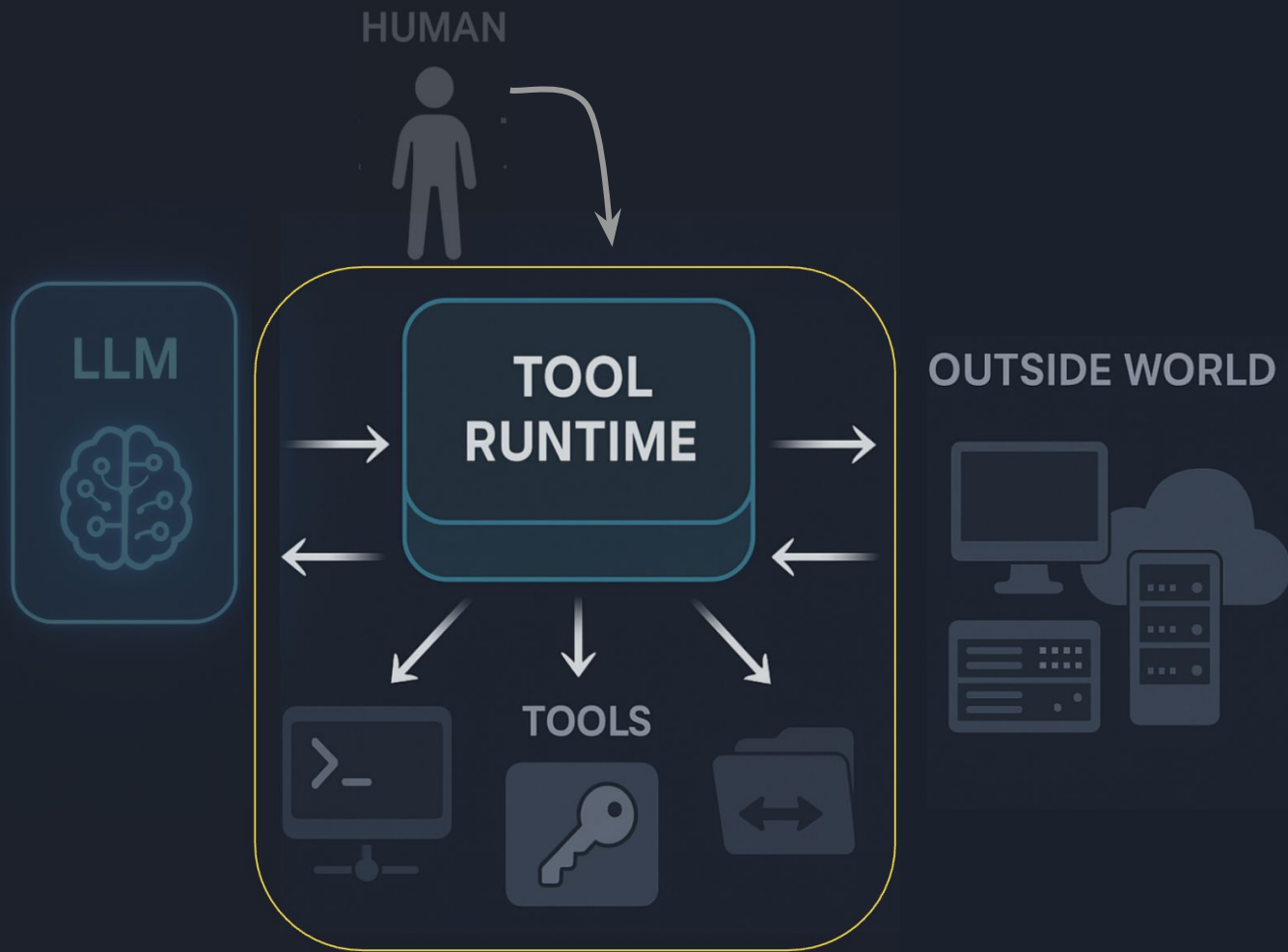
Human: *[logs into router, runs command, copies output, pastes back]*

ChatGPT: "The issue is..."



HUMAN





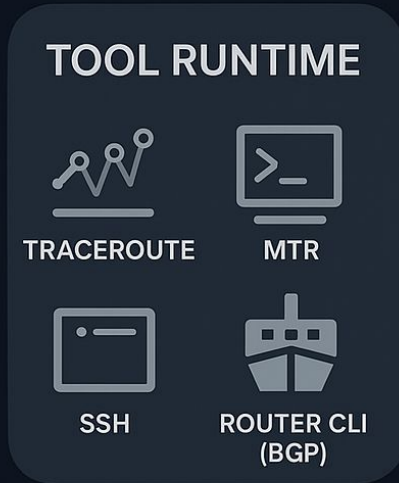
ChatGPT: "Install packages. Run *this npm*"

Tool Executor: [*COPY imports* → *RUN npm command*]

ChatGPT: "Create database config and .env file:"

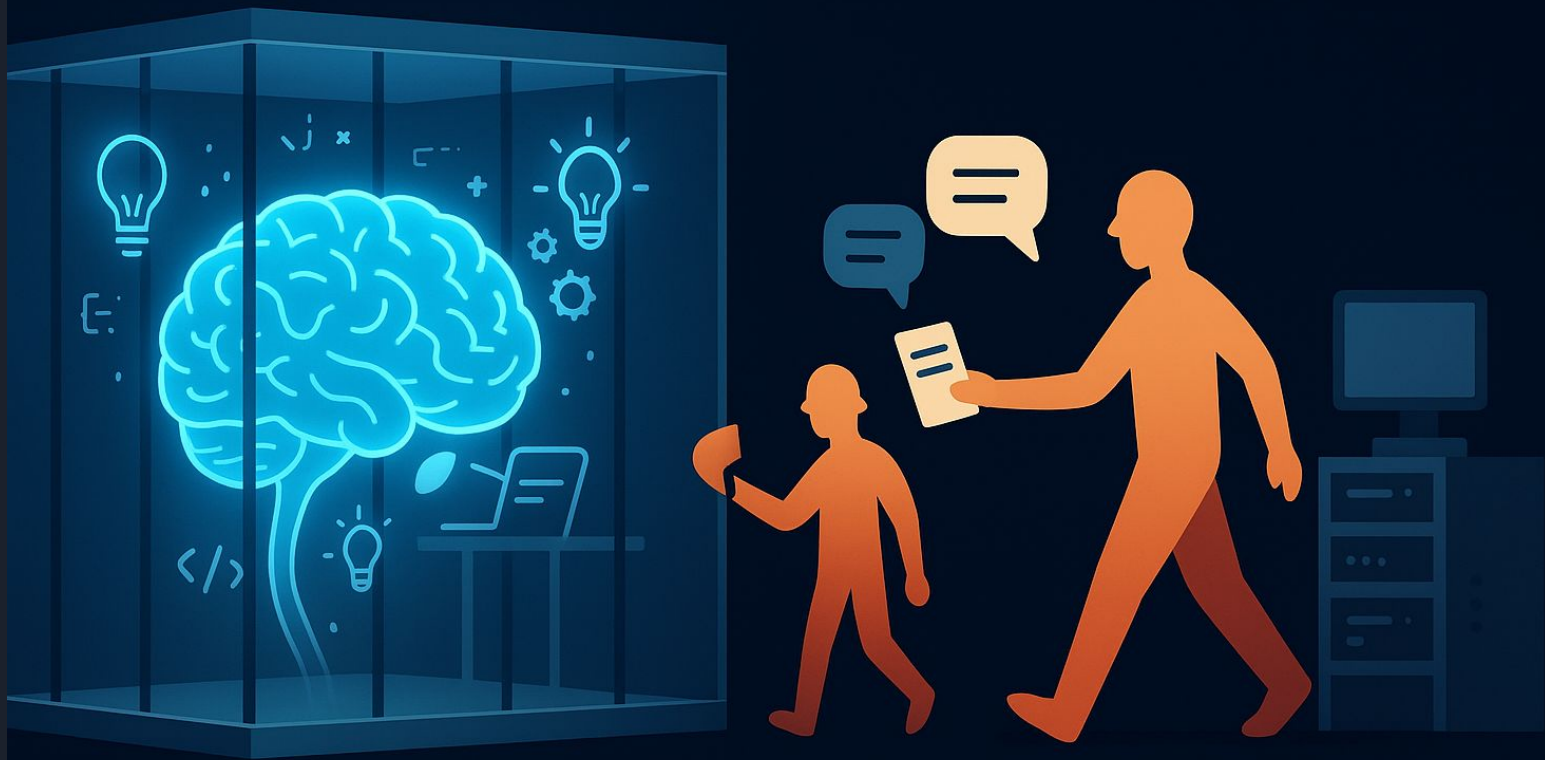
[generates db.js + .env]

Tool Executor: [*COPY db.js* → *CREATE file* → *COPY .env* → *CREATE file*]



OUTSIDE WORLD



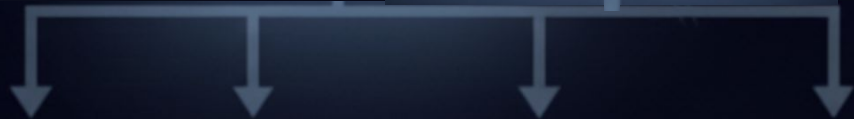




LLM



TOOL
RUNTIME



Traceroute



MTR



SSH



Router CLI
(BGP)

OUTSIDE
WORLD





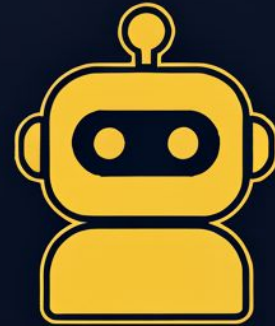
LLM

+



TOOLS

=



AI AGENT





AI Agents are no magic!



LLM

PROMPT

TOOL
EXECUTOR
Python

OUTSIDE
WORLD



Traceroute
Python



MTR
Python



Router CLI
Python

**Implementation:
Engineer Buddy Support Agent**



OUTSIDE WORLD



AI Agent - Glue and Bolts



LLM

TOOL
EXECUTOR
(Python)

PROMPT

OUTSIDE
WORLD

Traceroute

MTR

MTR

Router CLI

Router
CLI

Router CLI

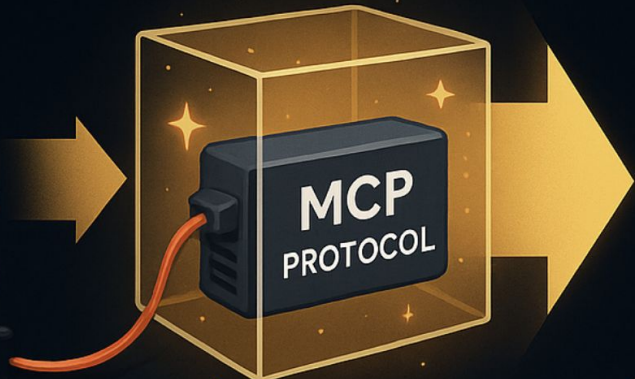
AI Software
Developer

CLUE

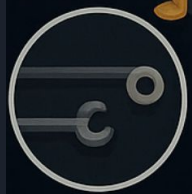
ROUTER CLI
PYTHON

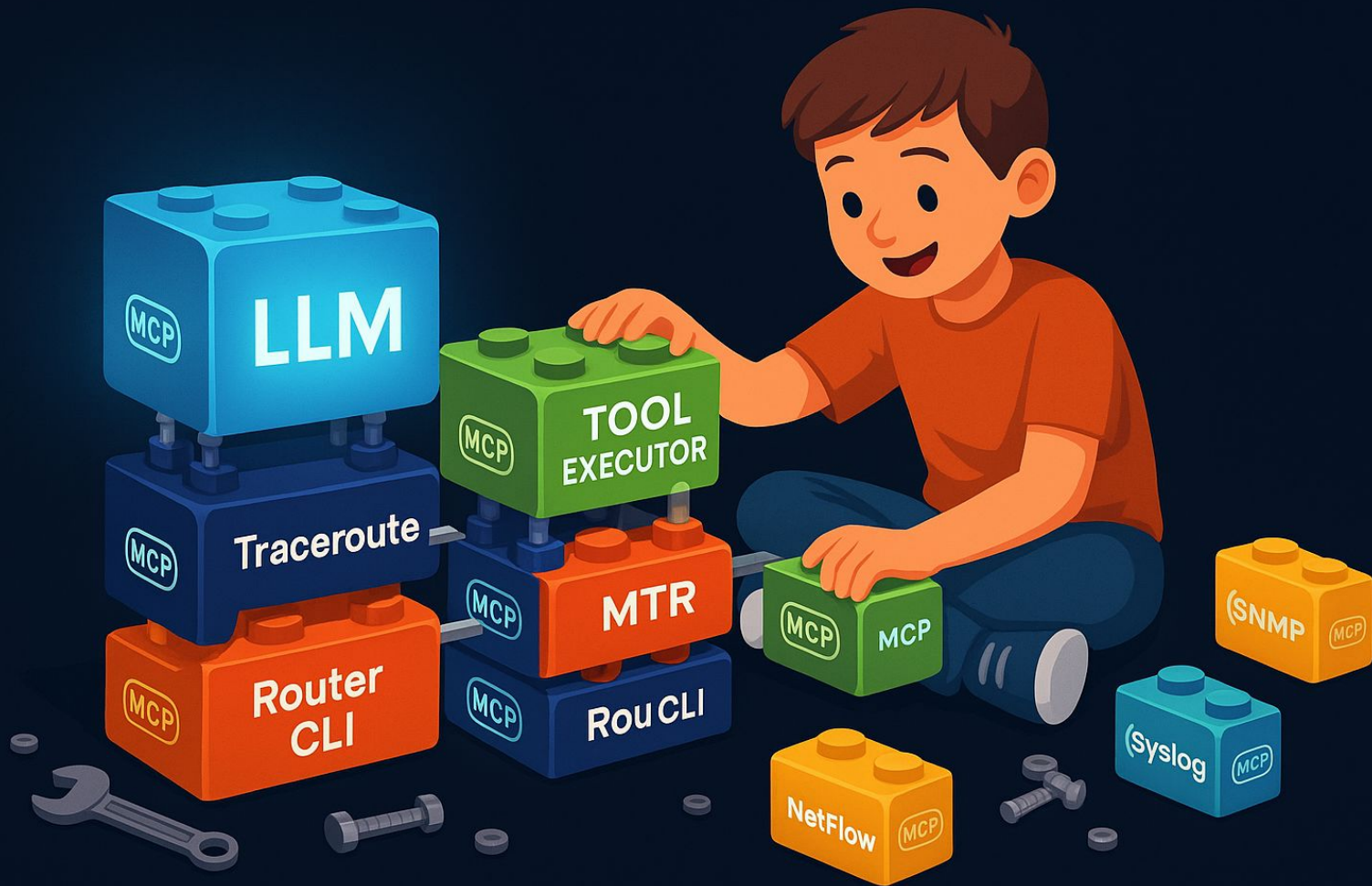
ADD
MCP WRAPPER

ROUTER CLI



Any tool can
become MCP-enabled







https://claude.ai



Claude

How can I help you today?



Research



Claude Opus 4.1



Search menu



Use style



Extended thinking



Web search



Drive search

Connect



Gmail search

Connect



Calendar search

Connect



Add connectors



Manage connectors



Life stuff



Claude's choice

Add custom connector BETA

Connect Claude to your data and tools. [Learn more about connectors](#) or get started with [pre-built ones](#).

ISP Demo

o.scraplab.dev/?code=298f64

✓ Advanced settings

Confirm that you trust this connector

This connector has not been verified by Anthropic. You are responsible for all actions taken with Claude.

Add

Cancel

- Server version isp
- List all asns
- Get peer info
- Get bgp sessions
- Get recent traffic
- Get open tickets
- Get rpki status
- Analyze asn health
- Troubleshoot bgp issues
- Investigate traffic anomaly
- Isp noc help

Investigate why ASN 64513 is experiencing intermittent connectivity issues



 Research



Claude Opus 4.1 



Write



Learn



Code



Life stuff



Claude's choice

Probed ASN connectivity issues using diagnostic network tools.

🕒 12s ▾

I'll investigate the intermittent connectivity issues for ASN 64513. Let me gather comprehensive information about their current status and identify potential problems.

I Get peer info ▾

- Good, so ASN 64513 (Metro ISP Corp) is an active member with a 100G port. ▾

I Get bgp sessions ▾

- Diagnosing BGP session failures causing network connectivity problems ▾

I Get recent traffic ▾

- The traffic shows high utilization at 78.9% on their 100G port. ▾

I Get open tickets ▾

- There's already a high-priority ticket open for BGP session flapping. ▾

I Troubleshoot bgp issues

- Now let me also check the RPKI status to see if there are any routing security issues contribu...

I Get rpki status

- The RPKI status shows only 1 prefix validated, but they're trying to announce 8923 prefixes.

I Analyze asn health

- Probed network anomalies to diagnose connectivity disruptions.

I Investigate traffic anomaly

- Analyzed ASN 64513 connectivity issues and formulated recommendations.

I

Get bgp sessions



●

Thought process



This is concerning! The BGP sessions show:

1. IPv4 session (192.168.200.254) is in ACTIVE state (not ESTABLISHED) and has only been up for 12 minutes
2. IPv6 session is completely IDLE
3. They're receiving 0 prefixes but trying to announce 8,923 prefixes

This indicates BGP session instability. Let me check their recent traffic and then use the AI troubleshooting tool.

I Get recent traffic



Recent Traffic

- **Port P003** (2025-01-02T12:00:00Z): 78799.7 Mbps (In: 39876.5, Out: 38923.2)
- 78.9% utilized

Summary

- **Current Total Traffic**: 78799.7 Mbps
- **Current Utilization**: 78.9%
- **Average Utilization**: 78.9%
- **Peak Traffic**: 78799.7 Mbps

I Get open tickets ^

Response

🇺🇸 Open Support Tickets - ASN 64513

- ****IXP-2025-001****: BGP Session Flapping Issues (Priority: HIGH, Status: IN_PROGRESS)

📊 Summary

- ****Total Open Tickets****: 1
- ****High Priority****: 1
- ****In Progress****: 1

● There's already a high-priority ticket open for BGP session flapping. v

🚨 Session Status Summary

ASN 64513 (Metro ISP Corp) is experiencing significant BGP routing issues.

* **IPv4 Session (192.168.200.1 -> 192.168.200.254)**: Currently in an `active` state with only 12 minutes of uptime. It is announcing 8923 prefixes but receiving 0. The `active` state indicates that the BGP session is attempting to establish but has not yet reached the `established` state, likely stuck in a TCP connection attempt or BGP Open message exchange.

* **IPv6 Session (2001:db8:200::1 -> 2001:db8:200::254)**: Currently in an `idle` state with 0 minutes of uptime. It is neither announcing nor receiving prefixes. The `idle` state typically means the BGP process is not even

Now let me also check the RPKI status to see if there are any routing security issues contribu...

I Get rpki status



```
#####  
# 🗝 RPKI Validation Status - ASN 64513  
  
- **203.0.113.0/24**: VALID (ROA Origin: AS64513)  
  
## 📊 Summary  
- **Total Prefixes**: 1  
- **Valid**: 1  
- **Invalid**: 0  
- **Not Found**: 0
```

Investigation Results for ASN 64513 (Metro ISP Corp) - Critical Connectivity Issues Identified

● Critical Status: Multiple Severe Issues Detected

ASN 64513 is experiencing **critical BGP instability** with multiple contributing factors that require immediate attention:

Primary Issues Identified:

1. BGP Session Failures

- **IPv4 Session:** In ACTIVE state (not established) - only 12 minutes uptime
- **IPv6 Session:** Completely DOWN (IDLE state) - 0 minutes uptime
- **Impact:** Receiving 0 prefixes while attempting to announce
- **Correlation:** BGP flaps exactly match physical port flaps

2. Physical Layer Problems

- Port P003 (100G) experienced recent flapping
- Strong indication of underlying physical connectivity issues
- Possible causes: faulty optics, cable issues, or port hardware

3. Capacity Crisis

- **78.9% utilization** on single 100G port
- Only 21.2 Gbps headroom remaining
- Processing 11.2 million packets/second
- **Single point of failure** with no redundancy

4. Active Support Ticket

- High-priority ticket IXP-2025-001 already open
- Confirms "intermittent BGP session drops"

Root Cause Analysis:

The exact correlation between physical port flaps and BGP session failures indicates **physical layer instability** as the primary cause. High port utilization (78.9%) may be exacerbating the issue by:

- Creating congestion during traffic bursts
- Causing BGP keepalive packet drops
- Triggering protective mechanisms that result in session resets

Immediate Actions Required:

1. Physical Layer Verification (Priority 1)

- Check port P003 error counters immediately
- Inspect fiber optics and transceivers
- Consider cable/optic replacement
- Verify duplex settings and VLAN configuration

2. BGP Session Recovery (Priority 1)

- Focus on IPv6 session restoration first (completely down)
- Verify BGP configuration consistency (ASN, timers, authentication)
- Check MTU settings on both sides
- Test basic IP reachability (ping/traceroute)

3. Capacity Emergency (Priority 2)

- Begin immediate capacity upgrade planning
- Consider adding second 100G port or upgrading to 400G
- Implement QoS temporarily to protect critical traffic

Coordination Required:

Contact Metro ISP Corp immediately:

- Technical: Mike Rodriguez (tech@metro-isp.example)
- NOC: Linda Park (noc@metro-isp.example)

Request from customer:

- BGP configuration details for both IPv4/IPv6
- Interface status and error counters
- Router logs related to BGP and TCP connections
- Confirmation of MTU settings

Please send email to Mike and Linda.



Research



I'll invoke the `send_email` tool to notify Mike and Linda about the critical connectivity issues:

S `send_email` ^

Request

```
{
  `recipients`: `[\"tech@metro-isp.example\", \"noc@metro-isp.example\"]`,
  `cc`: `[\"noc@ixp.example\"]`,
  `subject`: `URGENT: Critical BGP Session Failures & High Port Utilization - ASN
64513`,
  `priority`: `high`,
  `body`: `Dear Mike and Linda,
```

```
We've identified critical connectivity issues affecting your ASN 64513 connection
```

Some other scenarios

1. AI NOC Engineer In Plain English

The Problem: *"Is all going well in my network?"*

Today: SNMP queries and guesswork.

The Solution: Ask in plain English → Get instant answers.

AI asks Python script to query equipments

2. *Root Cause Analysis*

The Problem: *"Find the root cause of the outage"*

Today: grep, regex, endless scrolling, missing the actual issue.

The Solution: AI agent investigates across all your equipment

Agent connects to routers/switches → Pulls logs → LLM analyzes patterns
across devices

3. *Multi-Vendor Config Translation*

The Problem: *"Convert this Cisco ACL to Juniper firewall filter"*

Today: Google syntax guides, manual rewriting.

The Solution: Paste Cisco config to AI system → Get Juniper config

LLM with context data on both syntaxes does the translation

4. *The Vendor Ticket Assistant*

The Problem: *"Cisco TAC: "Run these 47 commands and send outputs"*

Today: hours manually collecting data

The Solution: AI agent automatically runs all commands for you

LLM reads request → Python runs commands → Formatted output file

5. BGP Config Validator Using LLMs

The Problem: *About to push BGP config. Any dangerous mistakes?*

Today: Hope you catch mistakes before customers lose connectivity.

The Solution: Config → LLM validation → Warnings before deploy

LLM checks configs against networking best practices

6. *Instant Procedure Lookup During Outages*

The Problem: *Fiber cut at 3AM. Junior on-call. Where's the runbook?*

Today: Frantically searching wikis while the network is down.

The Solution: "Fiber cut on link to Site-B" → AI retrieves procedure
RAG system with your documentation → LLM understands context →
Delivers specific procedures

7. *Network Diagram Generator*

The Problem: *"I need a network diagram for this new customer setup"*

Today: Play with Visio placing boxes and lines.

The Solution: Describe the setup → AI generates diagram code

LLM generates Mermaid/GraphViz diagram code

8. *Technical Report Writer*

The Problem: *Same incident, five different reports needed - for customers, management, vendors, regulators.*

Today: Hours writing variations of the same information.

The Solution: One technical description → AI generates all versions

Core facts + audience type → LLM adjusts tone and detail level

9. *Network Documentation That Updates Itself*

The Problem: *Config changed. Documentation outdated. Again.*

Today: Documentation is always 6 months behind.

The Solution: it commit with config change → AI updates the wiki

Git hooks → LLM analyzes changes → Proposes documentation updates

10. Alert Noise Reducer

The Problem: *50 duplicate/related alerts from one issue.*

Today: NOC engineer manually reading each alert to find the real issue

The Solution: AI groups similar alerts → Summarizes in plain English

"17 alerts about BGP peer 1.2.3.4 between 3:00-3:15 AM"

Demo time

bit.ly /
ronogdemo



Viorel Spînu, AI Enabler

