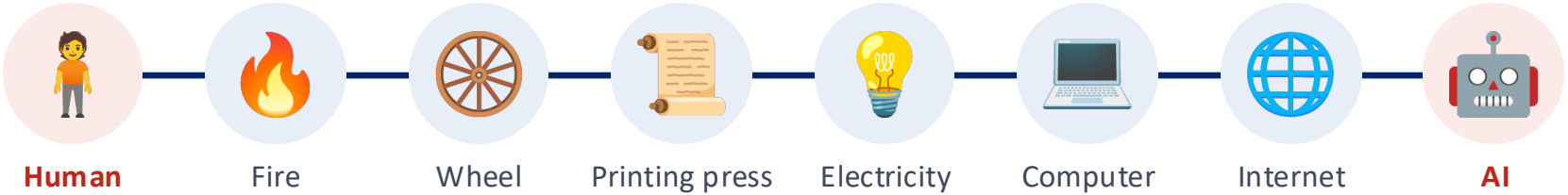
US NETWORKING USER ASSOCIATION

AI, Network by 2030 vs. Human

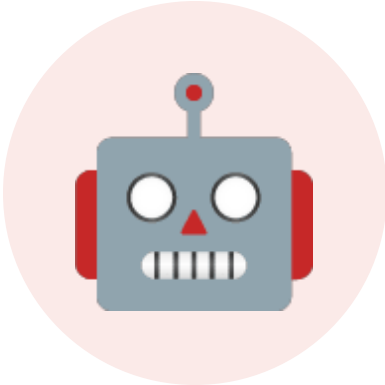


Humans do not evolve at the speed of technology. Our tools do.

Paresh Patel · Network Engineer & Author

Quick poll: raise your hand if…

- ✋ You've asked AI a question you'd never ask your manager
- ✋ AI wrote an email you signed as your own
- ✋ You've said “thank you” to a chatbot. Just in case.



“Noted. I'm keeping a list.”

The story: think, move, act

AI thinks. The network moves. Physical AI acts.



AI thinks

Models and agents



The network moves

Fabric · wireless · security · automation



Physical AI acts

Robots, vehicles, drones, satellites

The model gets the headlines. The fabric gets it trained.
The robot gets the applause. The wireless keeps it from walking into a wall.

The network engineer sits in the middle of the AI story.

(US)NUA
US Networking User Association

Three flavors of AI, and one now has a body

AI thinks · Physical AI acts



Machine learning

Finds patterns

Spam filters, fraud alerts



Generative AI

Creates text and code

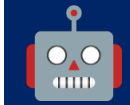
Chatbots, coding assistants



Physical AI

Sees, moves, acts

Robotaxis, warehouse robots, humanoids



Physical AI today

5M+ industrial robots in factories

~90K humanoids to ship in 2026

1.2M humanoids a year by 2030

Forecasts: Bank of America research, 2026



ML predicts you'll order pizza. GenAI writes a poem about it. Physical AI delivers it… to your neighbor.

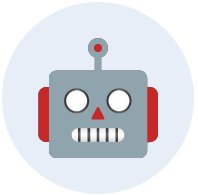


Analysts' warning: many humanoid demos are staged, AI-generated, or have a human with a joystick off camera.

Human vs. AI: the official scorecard

Challenge	Winner
Beat a world chess champion	**AI (since 1997)**
Answer 1,000 emails before lunch	**AI**
Work at 3 a.m. without coffee	**AI**
Fold a fitted sheet	**Human (barely)**
Know when the boss is joking	**Human**
Own the outage on the bridge call	**Human**
Keep coming to NUG, every time	**Human**





4 : 3

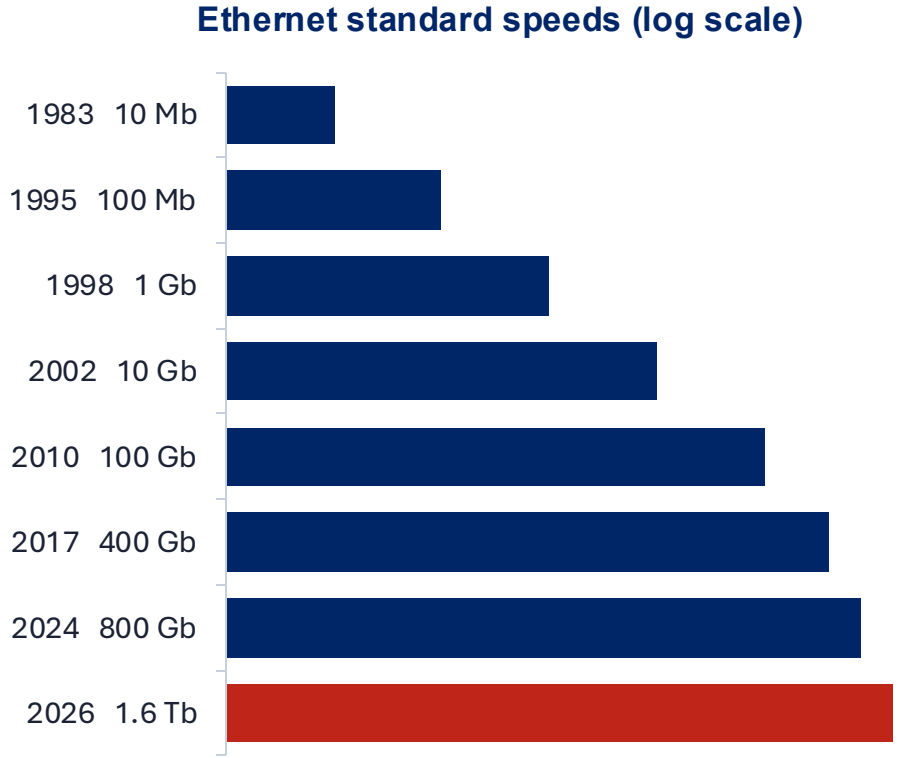
Moravec's paradox

Chess is easy for machines. Laundry and stairs are hard.

Human wins, 4 : 3. See you at the next NUG.

Networking: from screech to 800 gig

The network moves, faster every decade



1969: ARPANET
First message was “LO.” Then it crashed.

1990s: 56k dial-up
Someone picks up the phone. Download gone.

14,000,000

dial-up modems' worth of bandwidth on one 800G port

For AI, the network is part of the computer

The fabric gets it trained

	Traditional workloads	AI workloads
Traffic	Many independent conversations	Thousands of GPUs as one system
One slow packet	One user waits	Every GPU waits
What matters	Bandwidth, availability	Sync, congestion, tail latency
Packet loss	TCP retries, mostly fine	Stalls the whole job

The fabric choice

InfiniBand: lossless and RDMA by design

High-performance Ethernet (RoCE): open, multi-vendor, tuned near-lossless

Pick by workload, not logo.

Training an LLM is a group project: nobody goes home until the slowest packet arrives.



Takeaway: for AI, the network is part of the computer.

Under the hood: packets, orbits, and Wi-Fi

The network moves

Lost packet

TCP 1 2 × 4 3
resends, slows down

UDP 1 2 × 4 5
gone for good

InfiniBand 1 2 ▮ 3 4
waits for credits, no drop

Twist: RoCE v2 rides inside UDP, so Ethernet must be tuned nearly lossless.

Orbit and BGP

Nov 2025 GPU trains an LLM in orbit

Jan 2026 first orbital DC nodes launch

Low orbit: tens of ms, not 600

Lasers: ~50% faster than fiber

BGP: satellite ISPs peer like anyone

Peering: your peer moves 7.6 km/s. A truck roll is a rocket launch.

Wi-Fi 7 vs. Wi-Fi 8

Wi-Fi 7: 320 MHz, 4K-QAM, Multi-Link, ~46 Gbps

Wi-Fi 8: same speed on purpose; APs coordinate for reliability (~2028)

Office: no desk ports, wired shrinks to AP uplinks

Clinic: monitors and pumps on zero-drop wireless

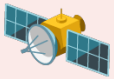
Wi-Fi 7 made it fast. Wi-Fi 8 makes it work, even in the bathroom.



TCP: “Repeat that?” UDP: “Missed it.” InfiniBand: “I'll wait till you're ready.”

AI is moving beyond the data center

The wireless keeps it from walking into a wall



Space

GPUs in orbit; satellite ISPs peer over BGP



Wireless

Wi-Fi 7 for speed, Wi-Fi 8 for reliability



Clinics

Wireless monitors and pumps; zero-drop roaming



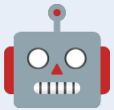
Vehicles

Decide on board; network carries updates and data



Drones

Remote ID, traffic control as an API



Robots

Factories to sidewalks, each one connected



AI is moving into robots, vehicles, wireless devices, satellites, and other endpoints.

Security: treat AI agents as identities

The network moves it safely

1. Least privilege
2. Segmentation
3. Egress controls
4. Logging and observability
5. Treating AI agents as identities



Takeaway

An AI agent should be treated like a new class of network-connected identity.

An agent logs in, calls APIs, and moves data. Secure it like any other identity.

The network job in 2030

+170M
jobs created

–92M
jobs displaced

+78M
net new jobs

World Economic Forum, Future of Jobs 2025 (by 2030)

😴 Retiring

- Same VLAN on 40 switches, by hand
- “Did you reboot it?”
- Spreadsheet as source of truth
- 2 a.m. copy-paste changes

The engineer in the middle

🎯 Hiring

- AI fabric engineer
- Network automation (Python, Ansible)
- Zero trust security
- AI-assisted observability
- Satellite & edge networking

AI won't replace network engineers. It'll replace the ones still naming switches SW-NEW-FINAL-2.

Final score: Human + AI



AI is not making the network less important.
It is making the network part of the AI system.

Network engineers who understand how to work alongside AI will be increasingly valuable.

Thank you! Let's watch 2 min Video on AI vs Human
https://www.youtube.com/watch?v=Gdzap0yH9tk