



What do these three things have in common?

- Video games in the 80s and 90s
- A cyber security software company
- AI?

Today I'm going to tell you that story. First, a teaser, then some career advice, and finally a ground-breaking technology story.

***not a sales pitch!**

1993



29

AMMO

97%

HEALTH

2 3 9
5 6 7

ARMS



100%

ARMOR



BULL
SHEL
ROKT
CELL

157
29
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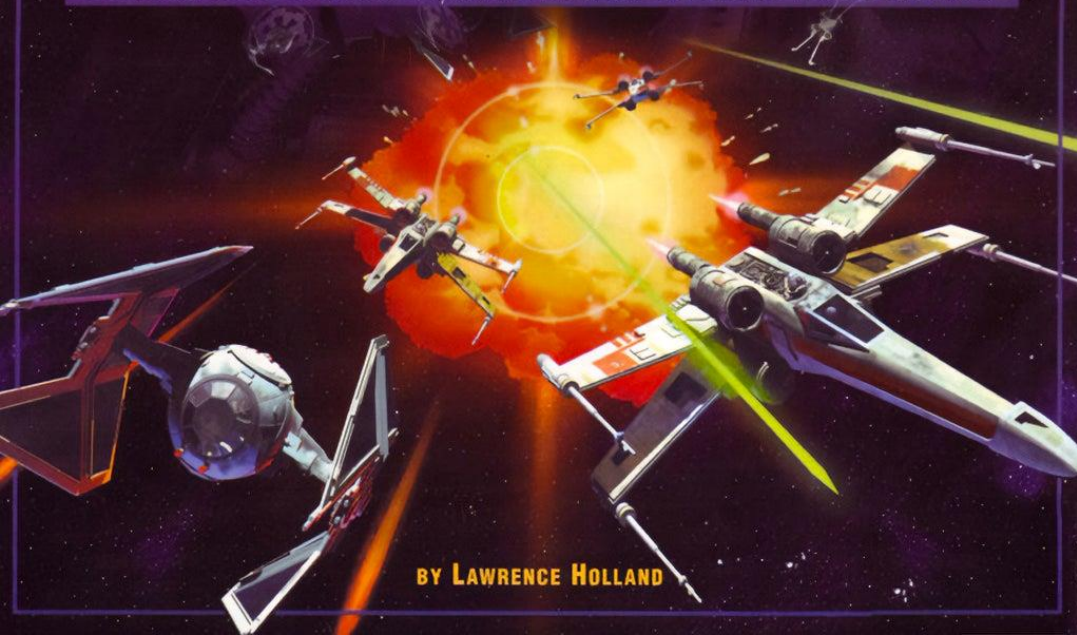
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LUCASARTS ENTERTAINMENT COMPANY PRESENTS

1997

STAR WARS X-WING VS. TIE FIGHTER

SINGLE AND MULTI-PLAYER SPACE COMBAT SIMULATION



BY LAWRENCE HOLLAND

the first
multi-player
space combat
simulator
playable over
the internet

From the 80s to AI

Lessons learned from 40 years of riding
the tech waves...

Ashley McGlone

Product Enablement Architect

Tanium



The Technology Industry Career Path... PICK YOUR THINGS

After 40 years of messing with tech, here is my distilled wisdom...

- There will be a new thing (exciting!)
- You can learn and do the new thing
- You can update or integrate or migrate the old thing to the new thing
- You can build a career on the new thing
- The new thing will become the old thing (ie. tech debt, stale career)
- Every thing has bugs and support to wrestle
- Update your own new thing before it becomes the old thing and crushed by the competition
- Repeat

At Microsoft 10 years ago...

- Active Directory was becoming the old thing
- I chose to ride the new PowerShell thing
- I chose not to ride the new Azure thing
- I changed to the new Tanium thing

- The new Tanium thing kicked my butt for a year, totally new, until one day I woke up and “I am Groot!”

- These were some of my things. Your things will be different.

There are BIG new things and LITTLE new things

BIG new things

- Industry disruptive technologies
- Change the way we work and create
- Open the door for a new wave of modes

Examples

- GUI OS
- The internet
- Servers > Virtualization > Containers > Cloud
- Mobile
- Video games
- Video conferencing
- AI
- Quantum Computing

Crypto currency

LITTLE new things

- Goods and services based on the big new thing
- Vendor implementations and frameworks
- Combining multiple things into a niche application
(Uber, DoorDash – cloud, mobile, geolocation, SaaS)

Examples

- Microsoft Windows, Apple MacOS
- ISP – Internet Service Providers
- Azure, AWS, GCP, Kubernetes
- Blackberry, iPhone, ~~Windows Phone~~
- Asteroids, Doom, Steam, Minecraft, Fortnite
- Zoom, Microsoft Teams, Google Meet
- ChatGPT, OpenAI DALL-E, Gemini, Copilot, Canva
- IonQ, D-Wave, Rigetti

Modes

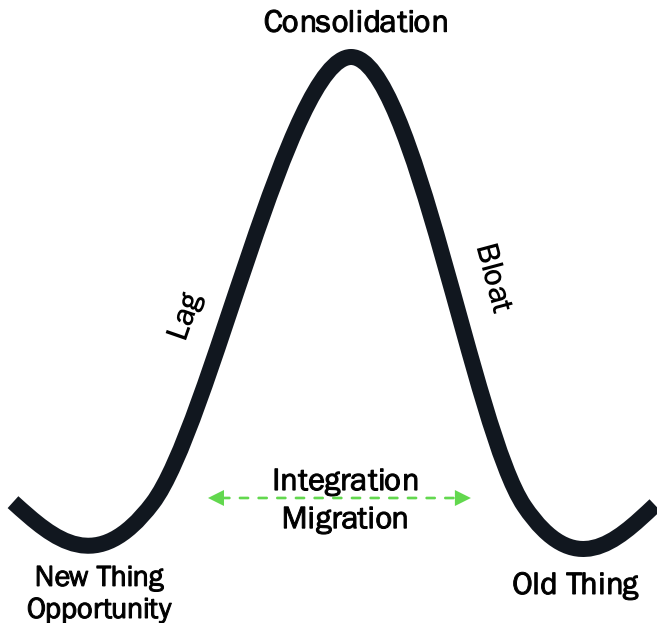
Timeless manifestations of technology things

- Expertise & experience - hands on, master the thing
- Software
- Hardware
- Security
- Legal
- Sales
- Entrepreneur - high risk, high reward
- Professional services, consulting
- Education - knowledge, speaking, writing, training
- Marketing & Journalism - talking about the new thing
- Integrations & Migrations - bridging old new
- Support - bugs and things going really badly, dirty jobs
- Operators - administration, implementation, support
- Users – the people who call us

Observations on new things and modes

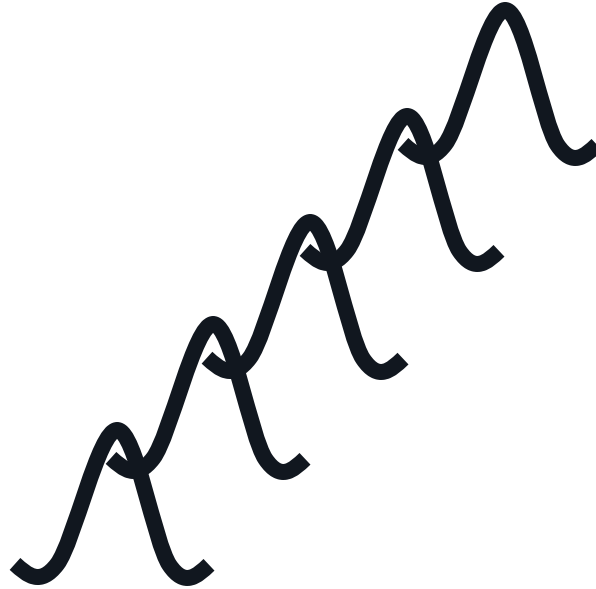
LAG and OPPORTUNITY

- Security always lags, agile hackers exploit new things
- Legal and compliance take forever to catch up
- Lots of profit in early innovation (ex. NVIDIA and AI chips)
- Boundless opportunity
- Many new companies start up on the new thing. Most of them fail and/or are acquired by the successful ones. That is called “consolidation”.
- Products grow too large, over-powered, as they take on features to compete with their competitors, tech bloat, tech debt, innovation slows. Example: Slack, Teams, Zoom
- Everyone trying to include what the other does dilutes their core value prop
- Integration/Migrate - someone has to make the old thing and new thing work together



Chaining new things into a career

Don't get stuck! Eat change for breakfast.



Industry Verticals

Do the new thing in context of a business problem

- Computer Gaming
- Finance
- Retail
- Manufacturing
- Sports
- Government
- Healthcare
- Entertainment
- Hospitality
- Etc.

Personal Branding

Build a public persona as the answer person for the new thing and turbo your career

- Online
- On stage
- On camera
- On message

The Technology Industry Career Path

Choose your own adventure

- Pick your new thing
- Pick your mode
- Pick your vertical
- Wrap some personal branding around it
- 💣 you have a career niche

Pick your combo

NICHE

The intersection of things

*This is your IT industry decoder ring
Dial in the tumbler to make a path*

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Mode

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Vertical

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- Etc.

Brand

- Online
- On stage
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- On message

Perspective

Juniors vs Seniors

Juniors

- only new thing knowledge
- moving fast ← your advantage
- excited

TOGETHER!

- Juniors teach the new thing to the seniors (old things)
- Seniors mentor juniors
- Collaborate on integrations & migrations for win/win

Seniors (OG)

- old thing 1 knowledge
- old thing 2 knowledge
- old thing 3 knowledge
- new thing knowledge
- probably moving slower

Point: Find a mentor and collaborator

*Now let's follow a software
company example...*

TRON











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Getting to real-time internet gaming...

1983 Founder of Totally Games started writing games, including Apple IIe and C= 64

1989 Peter works for LucasArts one year

1990 Peter moves to Totally Games

- writes a 3D gaming engine for Secret Weapons of the Luftwaffe

- writes several titles including the Star Wars series

1993 Totally Games delivers several hit titles

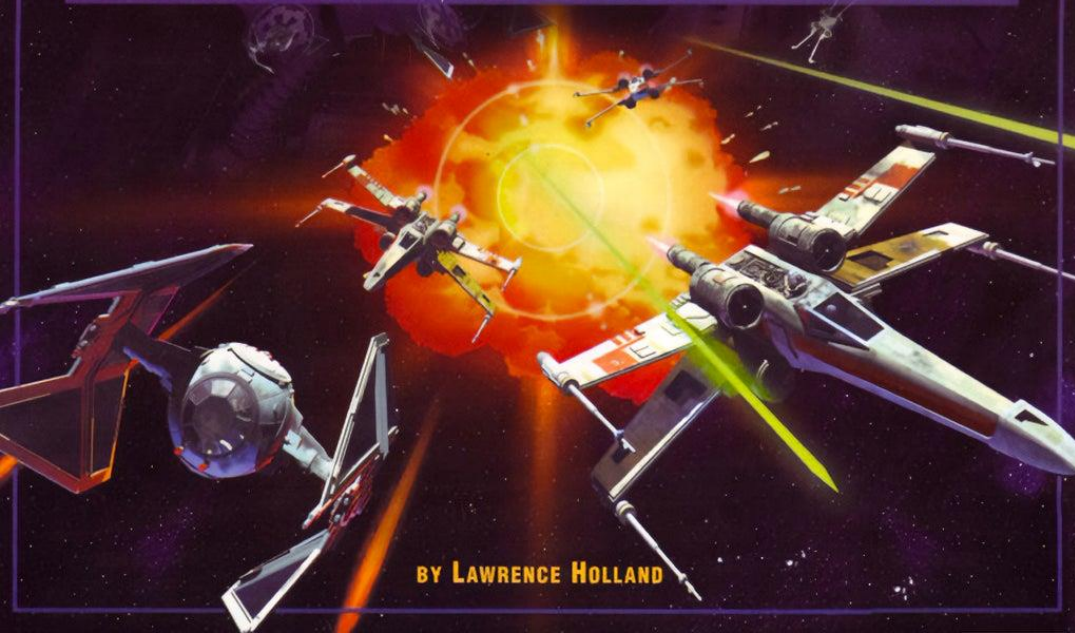
1993 DOOM graphical four-player LAN play

1997 Totally Games delivers X-WING vs TIE FIGHTER for LucasArts

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Speed?

LAN/Internet today vs 1990s dial-up



Copilot

A gigabit internet connection is **significantly faster** than a 28.8 kbps dial-up modem. To put it into perspective:

- **Gigabit internet:** 1 gigabit per second (Gbps) = 1,000 megabits per second (Mbps)
- **Dial-up modem:** 28.8 kilobits per second (kbps) = 0.0288 Mbps

So, a gigabit connection is **34,722 times faster** than a 28.8 kbps dial-up modem! This means you can download large files, stream high-definition videos, and browse the web much more smoothly and quickly with gigabit internet.

Do you have any other questions about internet speeds or technology?

Speed?

LAN/Internet today vs 1990s dial-up



Here's how long it would take to download a 1GB file over the two connection speeds:

- **Gigabit internet connection:** Approximately 8 seconds.
- **28.8 kbps dial-up modem:** Approximately 77 hours, 9 minutes, and 37.78 seconds.

8 seconds
VS
3 DAYS

The difference is quite staggering! With gigabit internet, you can download large files almost instantly, whereas with a dial-up modem, it would take over three days.

Is there anything else you'd like to know?

*But this would never happen
Someone would pick up the phone line
You wouldn't have a disk big enough to hold 1GB*





Problems to Solve

- Add network game play to existing game engine
- Large number of objects with complex behaviors
- Infinite field of view (unlike DOOM dungeons)
- Peer-to-peer architecture, no server
- High latency (>1 sec) over low bandwidth (28.8k modem)
- Packet loss
 - TCP sequencing retries
 - TCP dies
 - UDP not in sync
- Lag “warping” object movement

Solutions

- Got it working on LAN first, then moved to internet 🌟
- Send only player actions, not object data
- Actions packets were small for low bandwidth
- Highest speed peer hosts the game
- Smooth out “warping” with predictive steps when lag detected
- UDP custom sequencing
- Send packet data of N & N-1 in one packet to cover dropped packets

1997! Wow!

	X-Wing vs Tie Fighter	
Real-time action		
Optimized large data		
Low bandwidth		
Peer-to-peer		
Custom network protocol		
Ground-breaking tech		

Getting to real-time IT tools...

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1989 Peter works for LucasArts one year

1990 Peter moves to Totally Games, writes several titles including the Star Wars series

1993 DOOM four-player LAN

1993 Totally Games founded








1997 Totally Games delivers X-WING vs TIE FIGHTER for LucasArts

2000-2008 Peter writes for BigFix

2008-2023 Peter writes for Tanium

Sound familiar?

He did this in 1997 !?!?!? Why did it take so long for enterprise IT?

	X-Wing vs Tie Fighter	Tanium
Real-time action		
Optimized large data		
Low bandwidth		
Peer-to-peer		
Custom network protocol		
Ground-breaking tech		

How long does it take to... ?

Why? 1997?

- refresh your asset hardware and software CMDB?
- scan all your endpoints for vulnerabilities?
- patch all your endpoints in a zero day fire drill? Best possible time?
- identify a bad patch and recall it?
- scope and remediate a security incident?
- set a registry value on every Windows machine?
- complete those audit reports?
- suppress malware lateral movement?

Tanium Architecture

AI & Autonomous Endpoint Management



```
graph TD; A[AI & Autonomous Endpoint Management] --> B[Reporting & Workflows]; B --> C[Modules]; C --> D[Platform Questions & Actions]; D --> E[Real-time Architecture];
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Reporting & Workflows

Modules

Platform Questions & Actions

Real-time Architecture

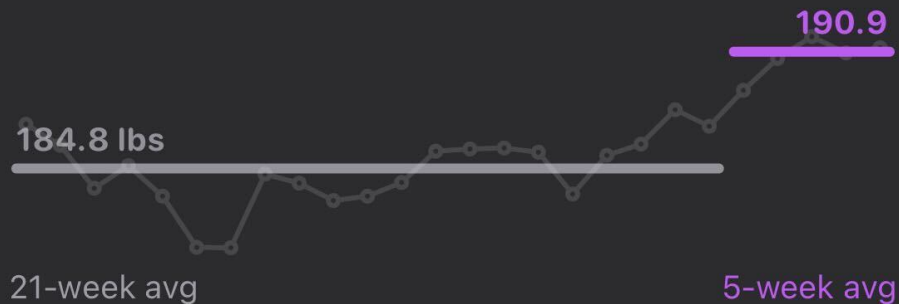
The phone notification no one wants to see...


Thank you Thanksgiving and Christmas.

Trends

 Weight

Your average weight increased during the last 5 weeks.





Need for a new approach that transforms how IT and Security teams identify and execute changes safely — at scale, with confidence, and in real-time.



Autonomous Endpoint Management (AEM)

AEM Harmonizes Multiple Solutions

- Reliable automations within and across solutions
- Real-time intelligence on impact of actions
- Automated actions identified & triggered by confidence scores

Asset Discovery &
Inventory

Digital Employee
Experience

Risk &
Compliance

Incident
Response

Endpoint
Management

Automation &
Orchestration



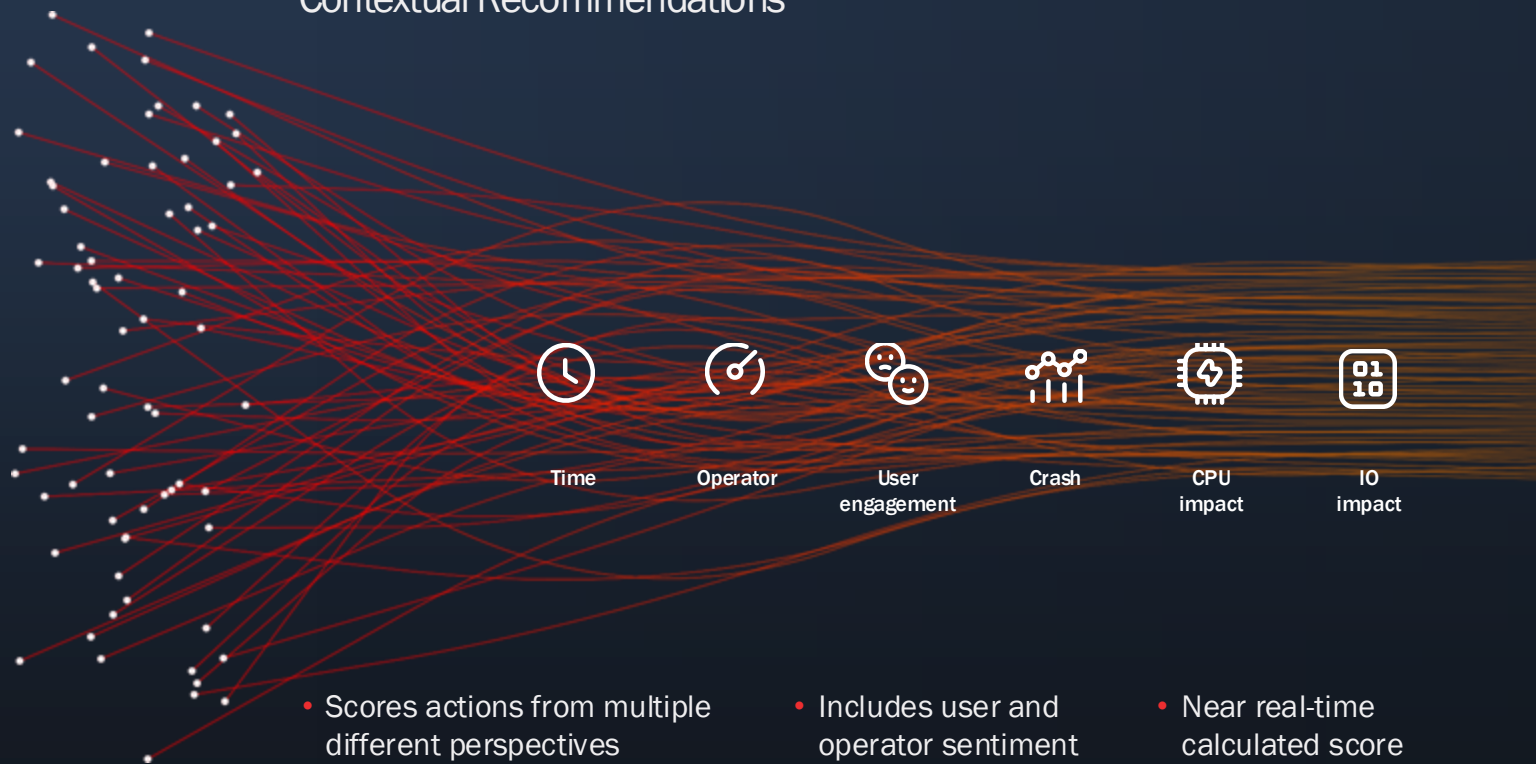
Real-time Global Intelligence

Decision making with confidence by
understanding impact of actions

- Analyzes trends across millions of endpoints in real-time
- Uses a mix of different analytical and AI models
- Constantly updated for changing IT conditions and technologies




AEM Insights Driven by Confidence Score

Contextual Recommendations



Deployment Templates and Rings

- Phased Ring based deployment

1	Canary: 142	 Wait Time Criteria
2	General Test: 356	 Wait Time Criteria
3	ALL: 558	 Wait Time Criteria

- Design to match business cadence
- Operator maintain progression control



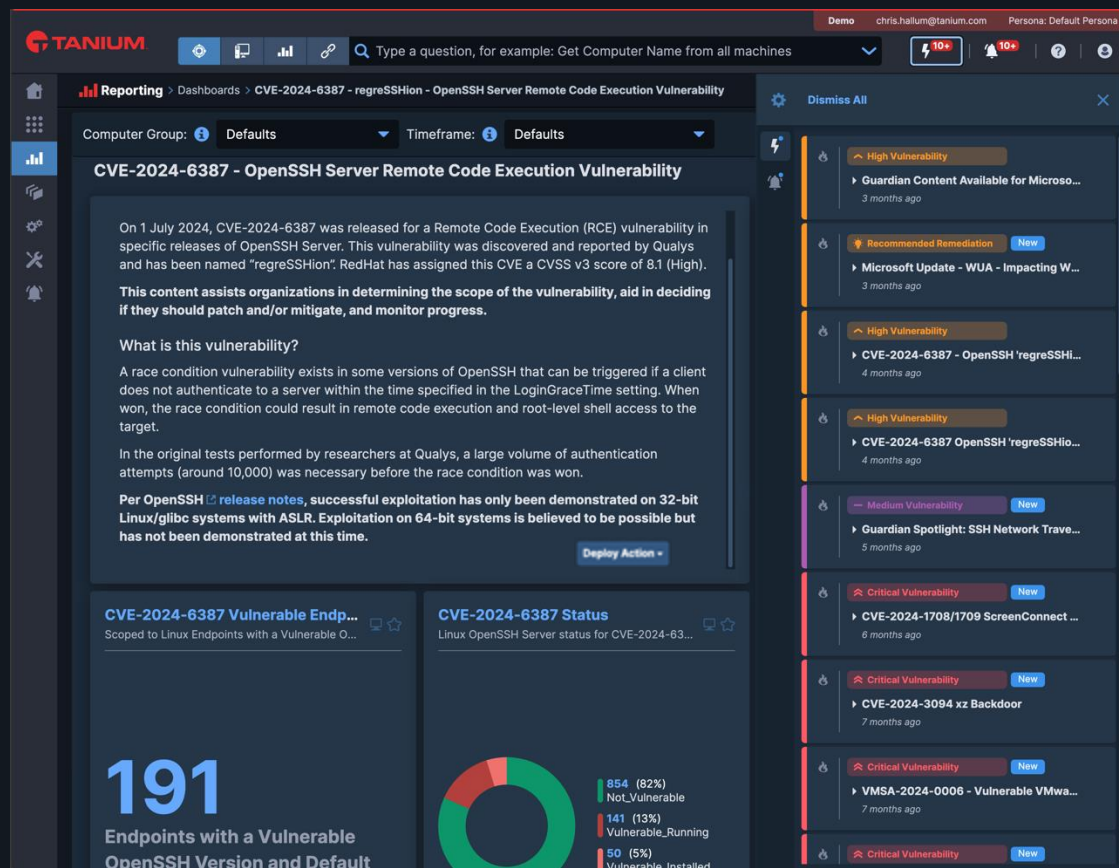
Action Oversight

Ensures human operators
are always in control

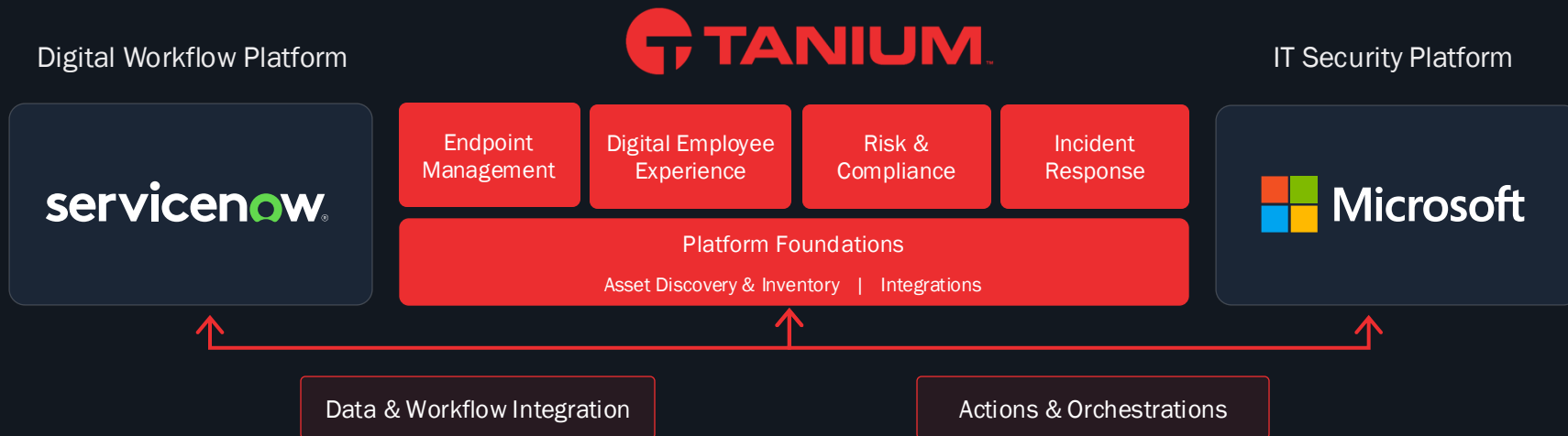
- Real-time system reporting and visibility of autonomous activity
- Visibility and control for diagnostic, planning and remediation
- Provides choice in levels of autonomy via operator controls

Tanium Guardian

- Like a personal trainer for IT
- Real-time global intelligence combined with human intelligence
- Delivers critical vulnerability information direct to the Tanium console
- Easy pivot to available remediation



Tanium the Real-Time Platform for AI



An aerial night view of a city, likely New York City, with a digital overlay of glowing blue and white lines representing data or network connections. The text 'Tanium AEM Differentiators' is prominently displayed in the center-left.

Tanium AEM Differentiators

Real-time data at scale

True real-time visibility that's foundational for any autonomous platform

Converged endpoint platform

Breadth of actions supporting IT Operations and Security teams

Reliable and resilient automation

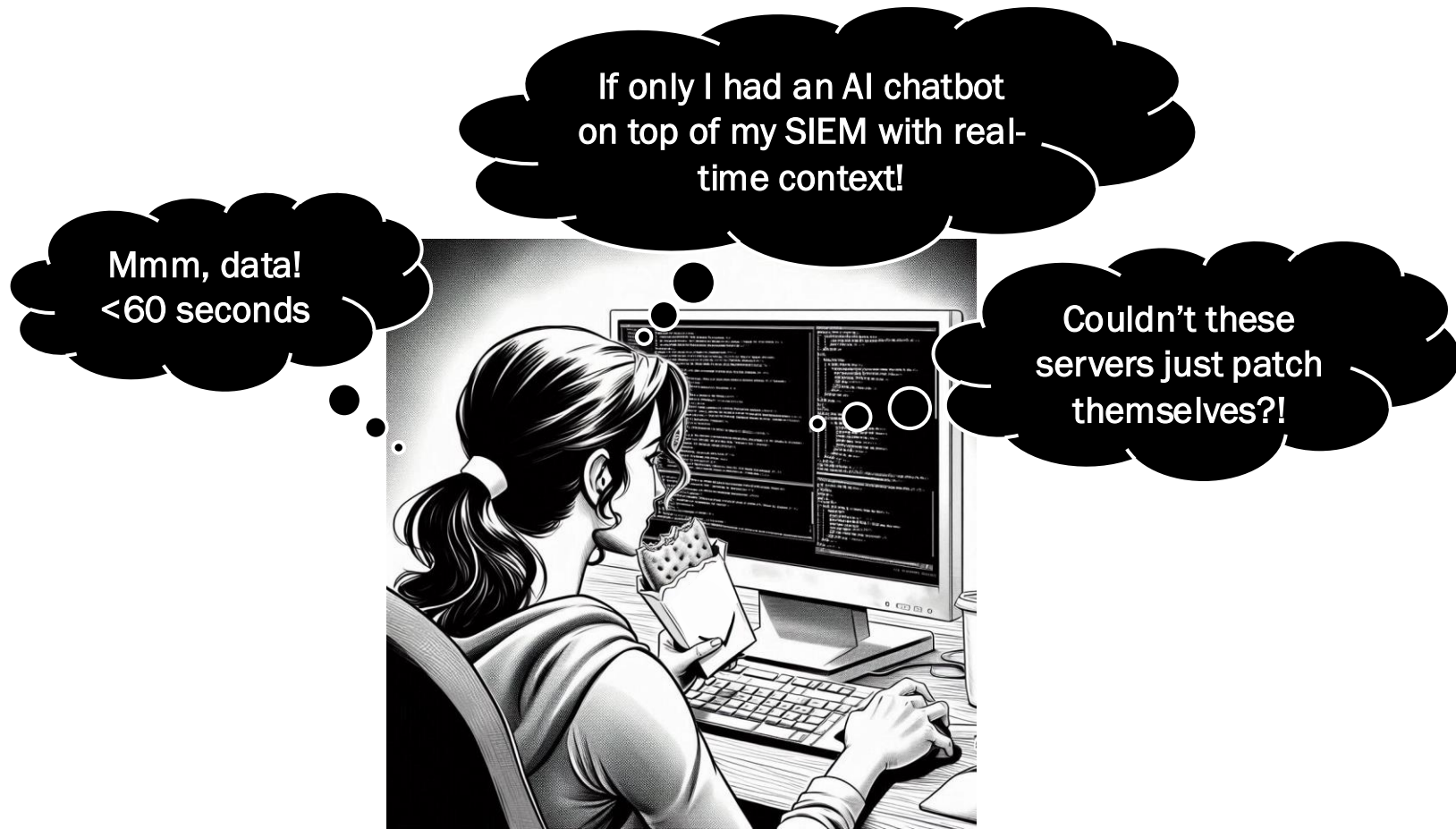
Confidence scores with deployment rings, adapts to changing conditions

I'm hungry!

If only I had a nutritionally-
complete, warm meal in the
palm of my hand in 60
seconds?

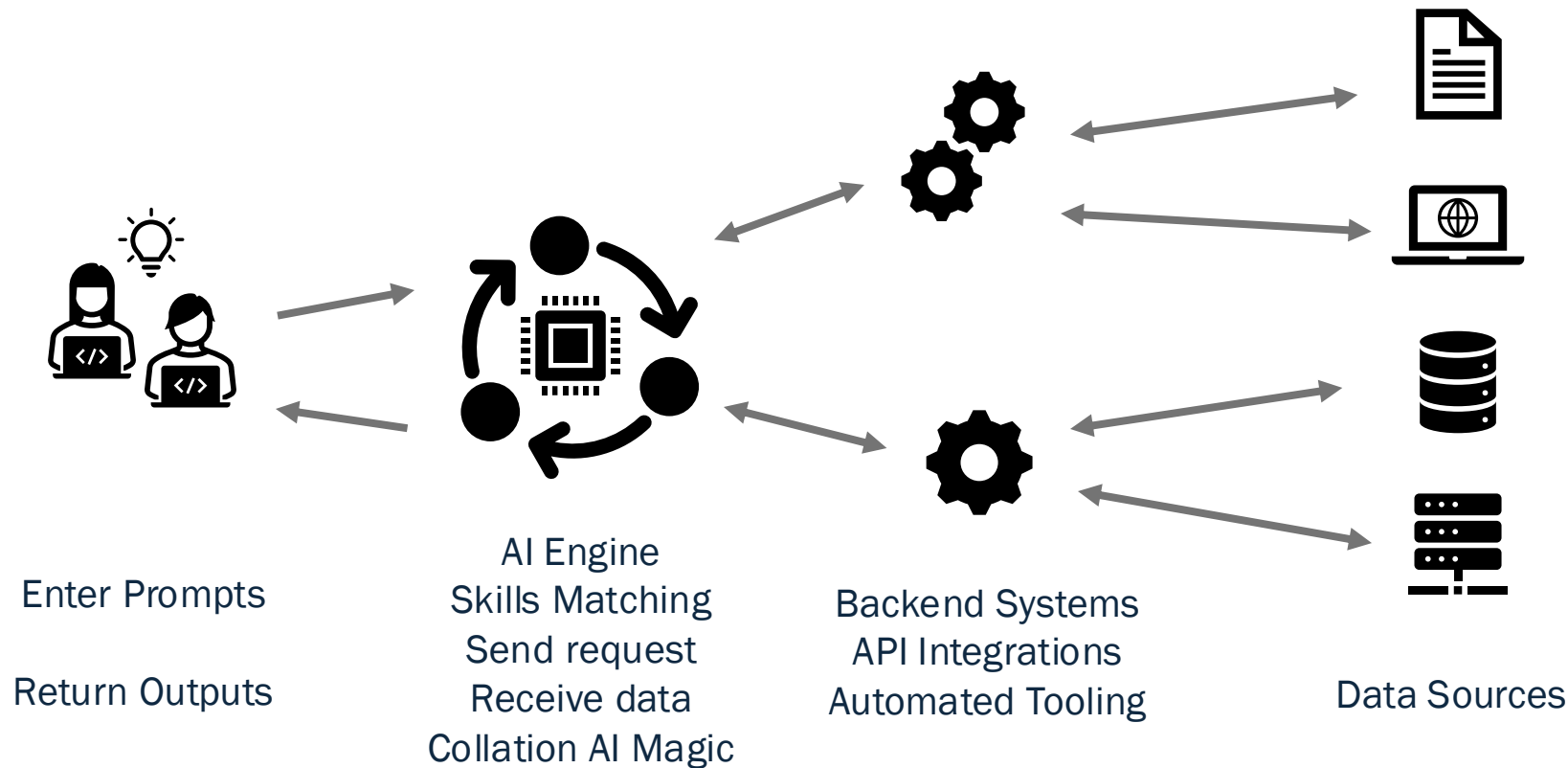
What if this
carriage could just
drive itself?





AI SecOps Architecture

Conversing with your SecOps data sources from a single interface



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High rate of change

Low rate of change

Let's go!

I've had 40 years of fun in tech.

Now it's your turn!



<https://www.linkedin.com/in/ashleymcglone/>
<https://github.com/GoateePFE/SSUTechFest2025>