Tech Talk 14
with John Patrick
Thursday, March 27, 2025

➤ Sign-up sheet

➤ johnpatrick.com

➤ Obligatory security briefing

➤ AI

➤ Bitcoin

➤ Q&A

➤ Security brief for 2024

- ❖ Passwords: root cause of many problems
- ❖ Cybercrime is rampant and growing
- ❖ Fraud
- ❖ Phishing
- ❖ Spoofing/Identity theft
- ❖ DDOS
- ❖ Text messages, not just email

➤ Cautions

- ❖ Don't trust emails or texts
- ❖ Be suspicious
- ❖ Don't open any attachment unless you know the sender and specifically expected it
- ❖ Hover over links
- ❖ Take passwords <u>seriously!</u>

➢ [Protect Yourself](#)

- ❖ 2FA

- ❖ Biometrics

  - ✓ Touch ID

  - ✓ Face ID

  - ✓ Worldcoin Tool for Humanity: Iris scans

- ❖ Be cautious and do not trust what you see

- ❖ Use strong, unique passwords and a password manager

- ❖ My banking password:

  - ✓ HX_N7UrBqJMw-Xp*QAqot$mh@@igA9

➢ Password Managers

- ❖ 1Password
- ❖ Apple Passwords
- ❖ Google Password Manager
- ❖ Go passwordless with passkeys
    - ✓ 20 of top 100 websites
    - ✓ Expanding rapidly
    - ✓ Passkeys are secure and passwordless
    - ✓ Uses biometric data: fingerprints or faceprints
- ❖ Keep operating systems and software updated
- ❖ Use a reputable antivirus software

➢ Data Breach Statistics (2024)

- ❖ Total data breaches: 3,122
- ❖ Total victims affected: 349,221,481
- ❖ Data exposures: 25 (960,700 victims)
- ❖ Data leaks: 2 (2,696,728 victims)

➢ Regulation

- ❖ Sorely needed

- ❖ Industry begging for it

- ❖ GDPR

  - ✓ General Data Protection Regulation

  - ✓ Passed by European Parliament in May 2018

- ❖ CCPA

  - ✓ California Consumer Privacy Act - June 2018

- ❖ U.S. Congress

  - ✓ ????

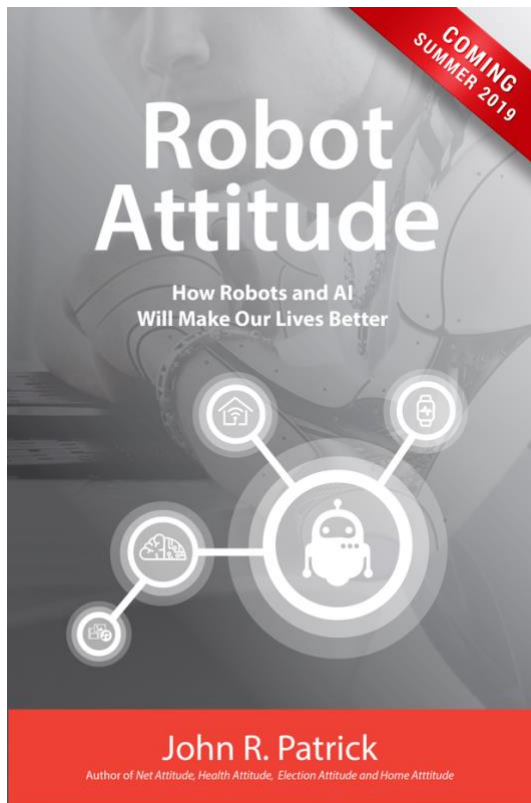➢ [PixVerse](https://pixverse.ai) digital video
   https://pixverse.ai

➢ Robots

https://youtu.be/GzX1qOIO1bE?si=BFWcUfmesWa1pEPw

- John Gage
- The Internet will change the world

- ➤ "Get Connected"
- ➤ December 16, 1994 @ MIT
- ➤ *Robot Attitude: How Robots and Artificial Intelligence Will Make Our Lives Better* (2019)
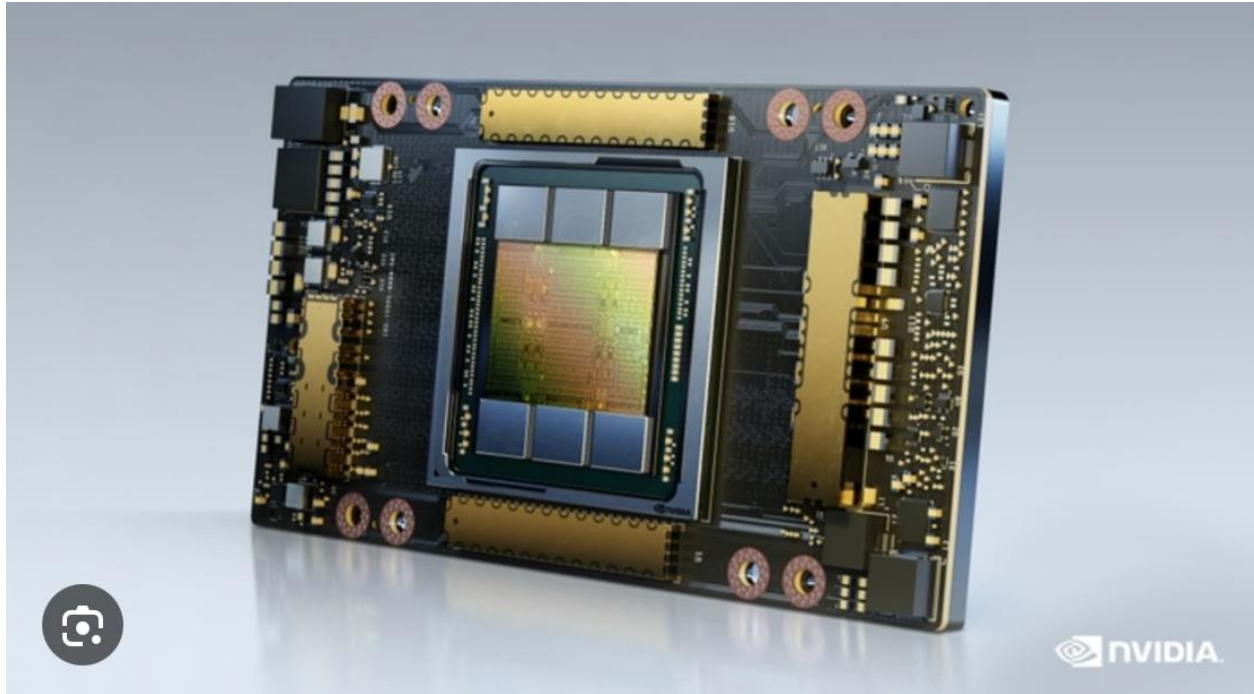- ➤ *AI will change everything*

On March 16, 2023, along with 1,000+ others, I signed a letter written by Elon Musk, CEO of SpaceX, Tesla & X, and Steve Wozniak, Co-founder, Apple. The letter, published by futureoflife.org, was a plea to 'Pause Giant AI Experiments'.

Result: competition at full speed. Exponential growth.

➢ Why exponential now?

✓   Awesome computer power (Nvidia)

- ✓ Reliable and fast Internet
- ✓ Near infinite cloud storage

- ✓
- ✓ Super smart computer scientists
- ✓ Breakthroughs in algorithms
- ✓ Venture capital: >8,000 startups
- ✓ Market potential > $1.5 trillion

Many components and elements

Artificial Intelligence
Machine Learning
Neural Networks
Deep Learning
Large Language Models (LLMs)
Natural Language Processing (NLP)
Computer Vision
Reinforcement Learning
Generative AI
Transformers
Convolutional Neural Networks (CNNs)
Recurrent Neural Networks (RNNs)
Self-Supervised Learning
Supervised Learning
Unsupervised Learning
Explainable AI (XAI)
Federated Learning
Edge AI
Transfer Learning
Quantum Machine Learning (QML)
Agentic AI
Neuro-Symbolic AI
Multimodal AI
Bayesian Networks
Decision Trees

- ➤ Generative AI: horizontal to vertical

- ➤ Examples with Perplexity Pro

Prompt: I have an Instant Pot. Give me a recipe for two with chicken, artichokes, angel hair pasta

Response:
Ingredients
- 2 boneless, skinless chicken breasts, cubed
- 1 tablespoon olive oil
- 1 small yellow onion, diced
- 2 cups chicken broth
- 1 cup water
- 6 oz angel hair pasta
- 1 can (14 oz) artichoke hearts, drained and chopped
- 2 cloves garlic, minced
- ½ teaspoon dried thyme
- Salt and pepper to taste
- Optional: Parmesan cheese and fresh parsley for garnish

Instructions:

1. Sauté Chicken and Onions
   Set your Instant Pot to sauté mode and heat the olive oil. Season the cubed chicken with salt and pepper, then add it to the pot. Sauté for about 2 minutes until lightly browned. Add the diced onion and cook for another 2–3 minutes until softened. Remove the chicken and onions from the pot and set aside.

2. Deglaze the Pot
   Add the minced garlic to the pot and sauté for 30 seconds until fragrant. Pour in a splash of chicken broth to deglaze the pot, scraping up any browned bits at the bottom with a wooden spoon.

3. Add Broth, Artichokes, and Pasta

Add the remaining chicken broth, water, thyme, and chopped artichokes to the pot. Return the sautéed chicken and onions to the mixture. Break the angel hair pasta in half if needed and layer it on top (do not stir).

4. Pressure Cook
Close the lid of your Instant Pot, set it to high pressure, and cook for 4 minutes.

5. Quick Release
Once cooking is complete, carefully perform a quick pressure release. Open the lid.

6. Combine and Serve
Gently stir everything together to combine the pasta with the sauce. Adjust seasoning with additional salt and pepper if needed. Serve hot with grated Parmesan cheese and fresh parsley for garnish.

This dish is hearty, flavorful, and perfect for a cozy dinner for two!

HDOA Board Meeting Update for January 27, 2025

Shoreline Update
Mr. Davis provided an update regarding funding of Flagler County's Beach Renourishment projects. Flagler County will be applying for FEMA Cat B funding for the HDOA shoreline since FEMA Cat G application was denied. The Shoreline Committee would be in the process of interviewing consultants who are knowledgeable about grant funding.

Prompt:
Write a grant request from FEMA for category B funding for the Hammock Dunes Owners Association shoreline. The beach and shoreline are crucial for the protection of real estate values and preservation of a beautiful beach which directly relates to real estate values and thereby protects tax revenues for Flagler County.

Response:
Grant Request for FEMA Category B Funding

Applicant: Hammock Dunes Owners Association
Project: Emergency Protective Measures for Hammock Dunes Shoreline

Project Description:
The Hammock Dunes Owners Association seeks Category B funding for emergency protective measures to safeguard the Hammock Dunes shoreline in Flagler County, Florida. This project aims to mitigate immediate threats to public safety, protect improved property, and preserve critical economic assets.

Justification:
The Hammock Dunes shoreline is a vital component of Flagler County's coastal infrastructure, providing essential protection for residential properties and contributing significantly to the county's tax base. Recent erosion and storm events have created an immediate threat to public safety and property, necessitating urgent protective measures.

Scope of Work:
1. Beach nourishment and dune restoration along 10 miles of shoreline
2. Installation of temporary erosion control structures
3. Emergency repairs to existing coastal protection infrastructure

Estimated Costs:
Total project cost: $4,000,000
- Local share (Hammock Dunes Owners Association): $2,000,000

- Requested FEMA funding: $2,000,000

Benefits:
1. Protection of public safety by reducing flood and storm surge risks
2. Preservation of improved property valued at over $1.3 billion
3. Safeguarding of Flagler County's tax base, with waterfront properties contributing a 38% premium to property values

Eligibility:
This project qualifies as an emergency protective measure under FEMA's Category B funding, as it will eliminate immediate threats to lives, public health, and safety, while also preventing significant additional damage to improved property in a cost-effective manner[22].

Certifications:
The Hammock Dunes Owners Association certifies that:
1. It has legal authority and responsibility to undertake the proposed emergency protective measures
2. The proposed work addresses an immediate threat to the general public in the community
3. All necessary rights-of-entry and agreements to indemnify and hold harmless the Federal Government will be obtained

We respectfully request FEMA's consideration of this critical project to protect our community and preserve vital economic assets in Flagler County.

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Prompt: (with chatGPT)
I am sitting on the eighth floor of our condo building on the Atlantic Ocean. What is the distance from here to the horizon?

Response:

To estimate the distance to the horizon from your eighth-floor condo overlooking the Atlantic Ocean, we can use the formula for the distance to the horizon based on height above sea level.

Here's what we can do:

1. Estimate your height: You're on the eighth floor. Assuming typical floor heights of around 10 feet, being on the eighth floor would put you at about 80 feet above sea level.

2. Use the formula: There are online calculators for this purpose, but you can also use the following formula:

Distance to horizon (miles) = sqrt(observer height (feet) * 0.000052)

3. Plug in your estimated height: Assuming 80 feet, here's the calculation:

* In miles: Distance = sqrt(80 * 0.000052) ≈ 2.9 miles

Therefore, the distance to the horizon from your vantage point is estimated to be around 2.9 miles.

Keep in mind: This is a rough estimate. Actual visibility can be affected by factors like air pressure, temperature, and curvature of the Earth (which isn't a perfect sphere).

Prompt (using Perplexity Pro):

Response:
From the eighth floor of your condo building on the Atlantic Ocean, the distance to the horizon is approximately 17.49 kilometers (**10.87 miles**).
This calculation takes into account:
- An average floor height of 3 meters
- Your position on the 8th floor, putting you at a height of 24 meters above sea level
- The Earth's radius of approximately 6,371 kilometers

It's worth noting that this is a theoretical calculation and doesn't account for atmospheric refraction, which can slightly extend the visible horizon. Additionally, any obstructions on the coastline or large waves could affect your actual view of the horizon.

➢ Agentic AI

Wild Ginger reservation

Prompt: My wife and I would like to take two of our grandchildren to Paris for three nights. Departing on May 29 and returning on June 2. Give me suggested airlines and fares, hotels, tour information, restaurants, and museums.

Response: complete travel plan

Prompt: arrange it

➤ Pluses and Minuses of AI

❖ There are plenty of both.

❖ Pluses

- ✓ Robots with AI can do jobs which are difficult, dangerous, or boring.

- ✓ 24x7, no lunch breaks

- ✓ Boosts productivity and efficiency

- ✓ Collaboration - enabling us to learn

- ✓ Improved healthcare outcomes

❖ Minuses

✓ Mistakes, hallucinations, confabulations, and bias

✓ Can spread misinformation/deep fakes. Elections. General politics.

✓ Can eliminate millions of jobs.

✓ Can potentially threaten humanity

AI can now replicate itself — a milestone that has experts terrified

- ➤ It's all about data and algorithms.
- ➤ Generative AI
  - ❖ Conversation is key.
- ➤ Impact
  - ❖ Every organization, every person, every process

- The AI Revolution in Medicine
  - Peter Lee et al from Microsoft
- EHR
- Whole Exome Sequencing models
- Medical errors, medical research, diagnoses, physician notes, paperwork, and much more
- Stethoscopes
  - Proforma auscultation
  - Pneumonia, asthma, COPD, bronchitis, pleural effusion, cardiac irregularities
- X-Rays, CT/PET scans, MRIs
- Opportunities exceed exposures.
  - Chance for healthcare to catch up.
  - Go for the low hanging fruit.

➢ Robots in the home

- ✓ Humanoid
- ✓ Tabletop

[ElliQ](#)

[Video](#)

➢ The need for regulation

➢ Senate hearings (May, July, September) 2023

➢ Genie is out of the bottle.

➢ More genies will be coming out of more bottles.

➢ Europe and China far ahead

In 2000:
- Total papers published: 1,076,635
- Papers by Chinese authors: 43,065
- Percentage by Chinese authors: 4.0%

In 2024:
- Total papers published: Approximately 3.3 million
- Papers by Chinese authors: Approximately 891,000
- Percentage by Chinese authors: 27%

➢ Cryptocurrency and blockchain

❖ Crypto currencies and tokens

- ✓ Nothing physical

- ✓ Blockchain (No central authority)

- ✓ Secure

- ✓ Immutable

- ✓ How it works: Satoshi Nakamoto's original Bitcoin [paper](#)

- ✓ Fixed supply: 21 million Bitcoin

- ✓ 34,000+ cryptocurrencies and tokens in circulation

- ✓ 600+ exchanges

- ✓ Digital Wallets (one billion?)

➢ Is Bitcoin a currency or a security?

- ❖ 15,000+ merchants worldwide accept crypto for payment.

- ❖ Commodity Futures Trading Commission (CFTC) says it is a commodity

- ❖ SEC says it is not a security

- ❖ IRS says it is an asset

- ❖ Starting to look like a safe haven?

- ❖ BlackRock et al think so.

➢ Bitcoin and gold both popular

❖ As investment assets

➢ Price Performance

❖ Bitcoin has significantly outperformed gold over the past decade

❖ Bitcoin's 10-year return: 26,931%

❖ Gold's 10-year return: 125%

❖ Bitcoin is showing potential for high growth, albeit with higher volatility

➢ Properties

❖ Bitcoin

✓ Limited supply: Only 21 million bitcoins will ever exist

✓ Decentralized: Not controlled by any central authority

✓ Immutable: Transactions cannot be reversed or tampered with

✓ Fast global transactions: Can be sent quickly anywhere in the world

✓ Permissionless: No authorization needed to use or build on the network

❖ Gold

- ✓ Durable: Resistant to corrosion and tarnishing

- ✓ Dense: One of the heaviest naturally occurring elements

- ✓ Malleable and ductile: Can be easily shaped without breaking

- ✓ Conductive: Good conductor of heat and electricity

- ✓ Inert: Doesn't react with most chemicals

➢ Investment Characteristics

❖   Bitcoin

- ✓ High volatility: Prone to significant price swings

- ✓ Emerging asset class: Relatively new with growing adoption

- ✓ No third-party seizure: Cannot be easily confiscated by governments

- ✓ No direct taxation on transactions: Challenging to implement a taxation system

- ✓ Privacy: Transactions can be pseudonymous

❖ Gold

✓ Traditional safe-haven asset: Long history of preserving wealth

✓ Inflation hedge: Tends to maintain value during inflationary periods

✓ Industrial demand: Used in electronics, medical devices, and other industries

✓ Physical asset: Tangible and can be held directly

✓ Widely accepted: Recognized globally as a store of value

➢ Portfolio Diversification

❖ Both assets offer diversification benefits due to low correlation with traditional financial markets

✓ Bitcoin: Provides potential for high returns but with higher risk

✓ Gold: Offers stability and acts as a hedge against market volatility

➢ Conclusion

❖ While Bitcoin offers

✓ Potential for higher returns

✓ and technological innovation

❖ Gold provides

✓ More stable, time-tested store of value

❖ The choice between the two depends on

✓ Investor's risk tolerance

✓ Investment goals

✓ Overall portfolio strategy

Crypto Summary (billions) as of		3/24/2025	3/28/2024	
		Price	Price	Gain
Bitcoin		$88,288	$70,642	25%
Ethereum		$2,085	$3,576	-42%
Number of Cryptocurrencies		34,146	28,724	
Market cap of BTC		$1.69	trillion	
Market cap of ETH		$0.24	trillion	
Market cap of all crypto		$2.86	trillion	
Marketshare as of 3/22/2025:				
Bitcoin (BTC)		$1.67	46.0%	
Ethereum (ETH)		$0.24	18.8%	
The Rest		$0.95	35.2%	

52W H	109,115
52W L	49,121.24

➤ **What is driving up the price?**

- ❖ BlackRock (iShares Bitcoin Trust - IBIT)
  - ✓ Total Bitcoin holdings: 572,628 BTC
  - ✓ Value: $48.11 billion

- ❖ Fidelity (Fidelity Wise Origin Bitcoin Fund - FBTC)
  - ✓ Total Bitcoin holdings: 195,994.2 BTC
  - ✓ Value: $16.46 billion

- ❖ Other factors
  - ✓ Perceived shift to digital
  - ✓ Possible U.S. Bitcoin reserve
  - ✓ Regulation perceived positive

- 600+ crypto exchanges
  - Binance
  - Coinbase
  - Crypto.com
  - Gemini
  - Kracken
- 10 *Spot Bitcoin ETFs*

➢ Stablecoins

❖ Pegged to $ or something

- ✓ Tether (USDT)
- ✓ USD Coin (USDC) Circle
- ✓ Binance USD (BUSD)
- ✓ Dai (DAI)
- ✓ TrueUSD (TUSD)
- ✓ Frax (FRAX)
- ✓ Pax Dollar (USDP)
- ✓ Liquity USD (LUSD)
- ✓ Stasis Euro (EURS)
- ✓ Reserve Rights (RSR)

❖ For consumer

- ✓ Average cost to wire funds <> $45 + delays
- ✓ With stablecoin < $1 + instant
- ✓ Small fee on aggregate transfers

Blockchain technology

- ❖ Distributed database
- ❖ Consensus based
- ❖ Crypto currencies
- ❖ Digital artwork: NFTs
- ❖ Deeds
- ❖ Car, boat, airplane titles
- ❖ Birth, death, marriage certificates
- ❖ Votes
- ❖ DAOs
- ❖ DeFi
- ❖ FinTech
- ❖ Web3
- ❖ IBM and other IT vendors all over blockchain

Supply chain

➢ Sign up for Saturday morning e-brief at johnpatrick.com

➢ Copy of presentation
  ✓ https:// johnpatrick.com/techtalk14.pdf

Q&A