Adapting and Thriving:

Navigating the Intersections of AI, Machine Learning, and Economic Challenges as a Technical Specialist

Who am I?

- Director of Technical Advocacy at Silk

- 30 Years in the Tech Industry

- DBA (Oracle, SQL Server, MySQL…)

- DevOps, Analytics and AI

- Cloud Migrations and High IO Infrastructure

https://www.linkedin.com/in/kellyngorman/

https://dbakevlar.com

Various Social Media platforms as DBAKevlar!

In Last Year's Episode…

Although we were being told our jobs were in jeopardy, in truth, they would remain, just more cloud savvy.

"Clickbait" now tells us that AI will end our careers, but there's a lot of confusion around role vs. hype.
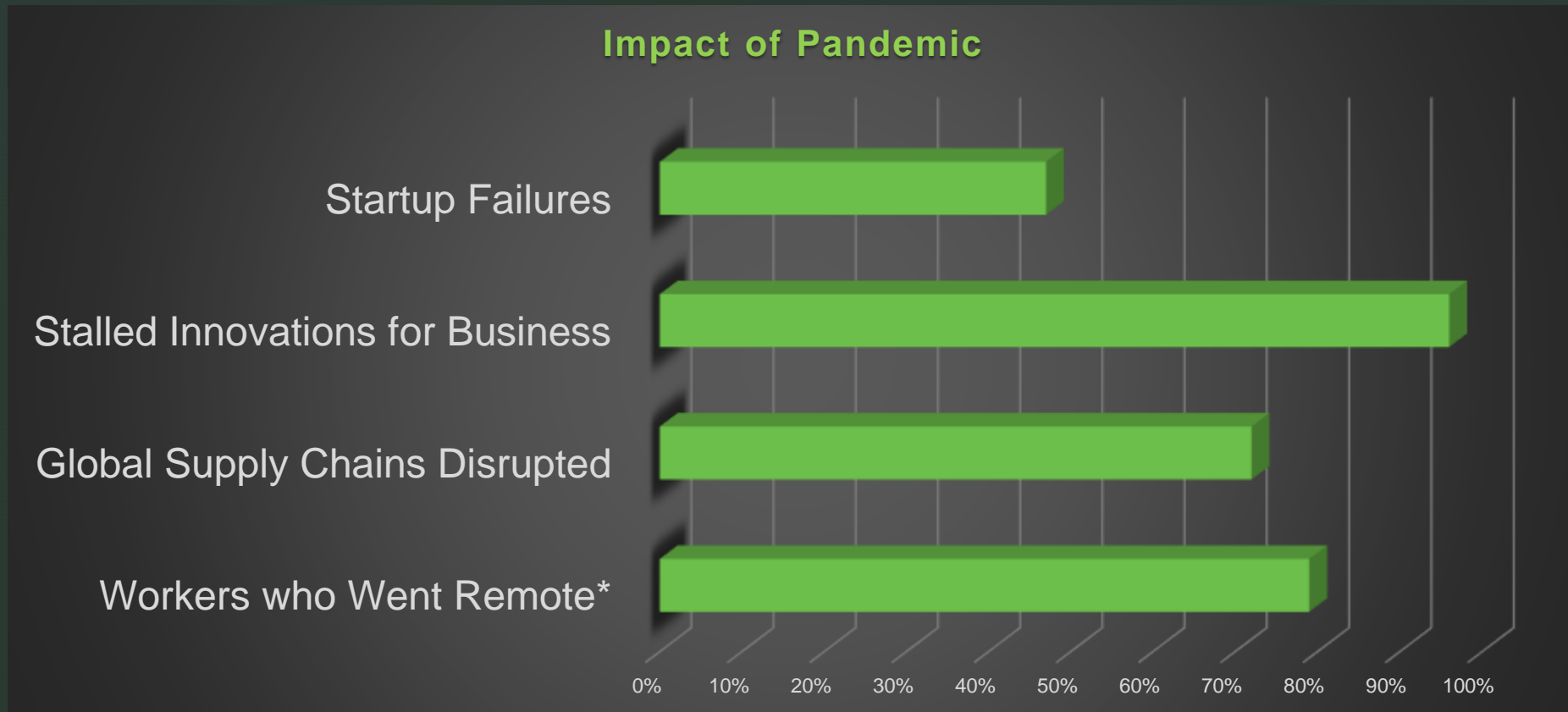
Layoffs to the tech industry were impactful, leading to extensive stress in the community.

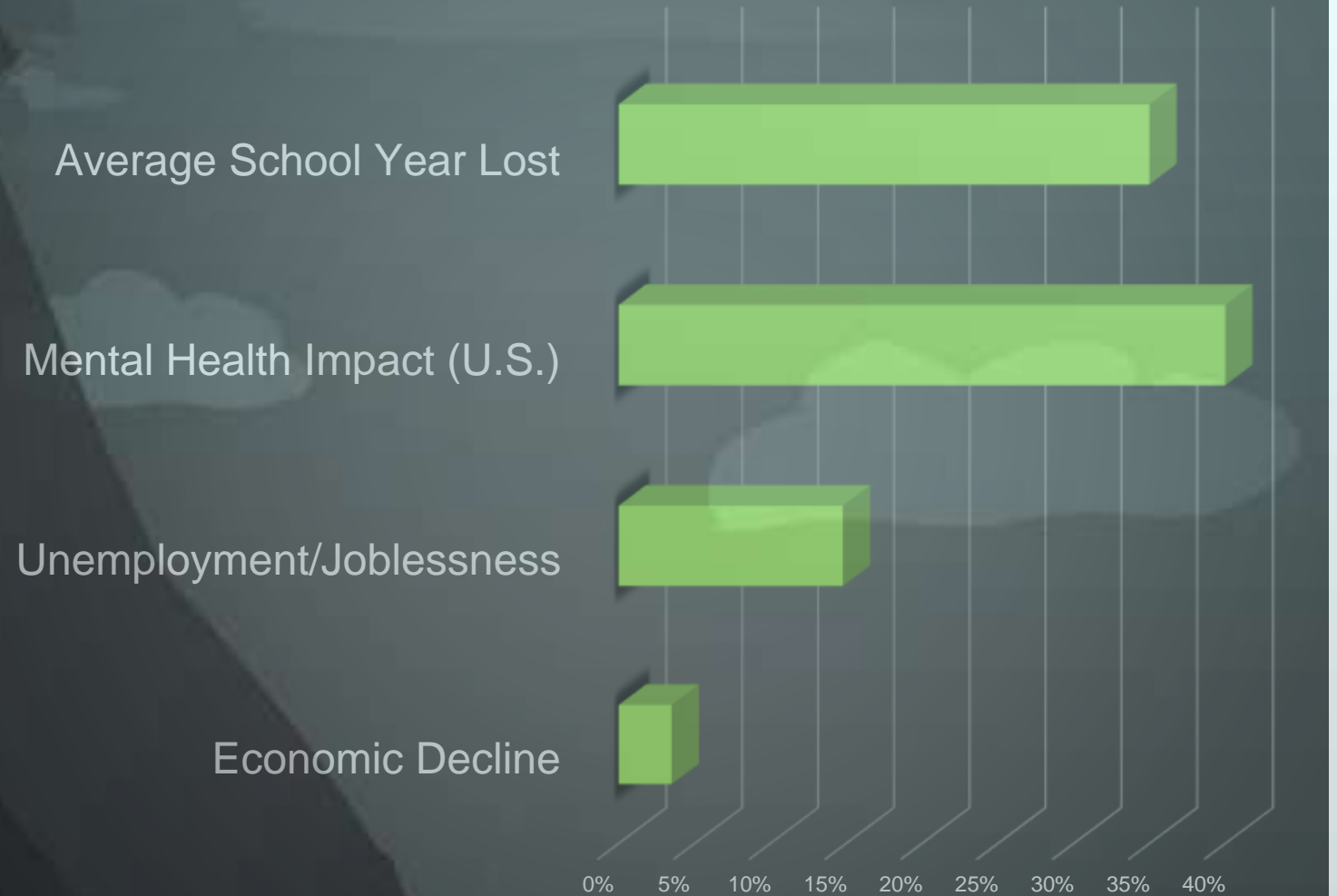So how do we overcome it all?

Where We Were and Where We're Going…

Pandemic and the Economy

Impact of Pandemic

Startup Failures

Stalled Innovations for Business

Global Supply Chains Disrupted

Workers who Went Remote*

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

Links in References

Remote Work

- From 2020 on, Remote work was adopted.

- Most tools and software couldn't handle the additional workload of so many remote workers.

- Companies had to pivot to support remote work.

- Huge Real Estate impact considering the amount of office space.

- Benefits of less commuting, but also remote workers rights matured in 2022

- 2023 saw an increase in pressure to bring workers back into the office, due to infrastructure, cyber security threats, etc.

Supply Chain and Jobs

- Decreased workers, flights, shipping and ports experienced congestion.

- Geopolitical tensions and trade restrictions resulted.

- Shift in consumer behavior due to increase in online shopping and demand for new products.

- All this resulted in financial strains and bankruptcies.

Decrease in IT Budgets and Layoffs

- During the pandemic, small businesses faced significant impact and closures.

- 2022 began the impact to the tech sector, an area that was the most resilient.

- Many tech industries restructured, reallocated resources and consolidated, leading to layoffs.

- Assumption around AI demand drove some decisions as well.

- Many roles that may not have had the assumption of AI inclusion, now included AI features.

Where Does That Leave Us?

The Crisis of Big Tech

Big Tech has had a large group of specialized roles.

- Needs skilled workers for consumers.

- Wants to decrease dependency on remote work.

- AI options for customer service, customer support.

In the short term, this may appear positive for Big Tech, but customers and technologists may win in the long run.

https://www.forbes.com/sites/forbesbusinesscouncil/2023/04/27/the-future-of-tech-workers-how-to-address-the-disconnect-between-perception-and-reality

The Truth is…

As more organizations migrate to the cloud, ensuring the security of data, applications, and services and infrastructure in ALL environments becomes paramount as part of the AI movement.
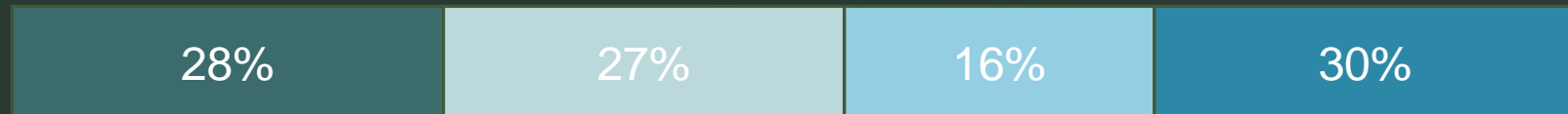
AI In Enterprise

69%	31%

AI Pioneers

- AI/ML is in production

AI Explorers

- AI/ML is in Pilot or POC

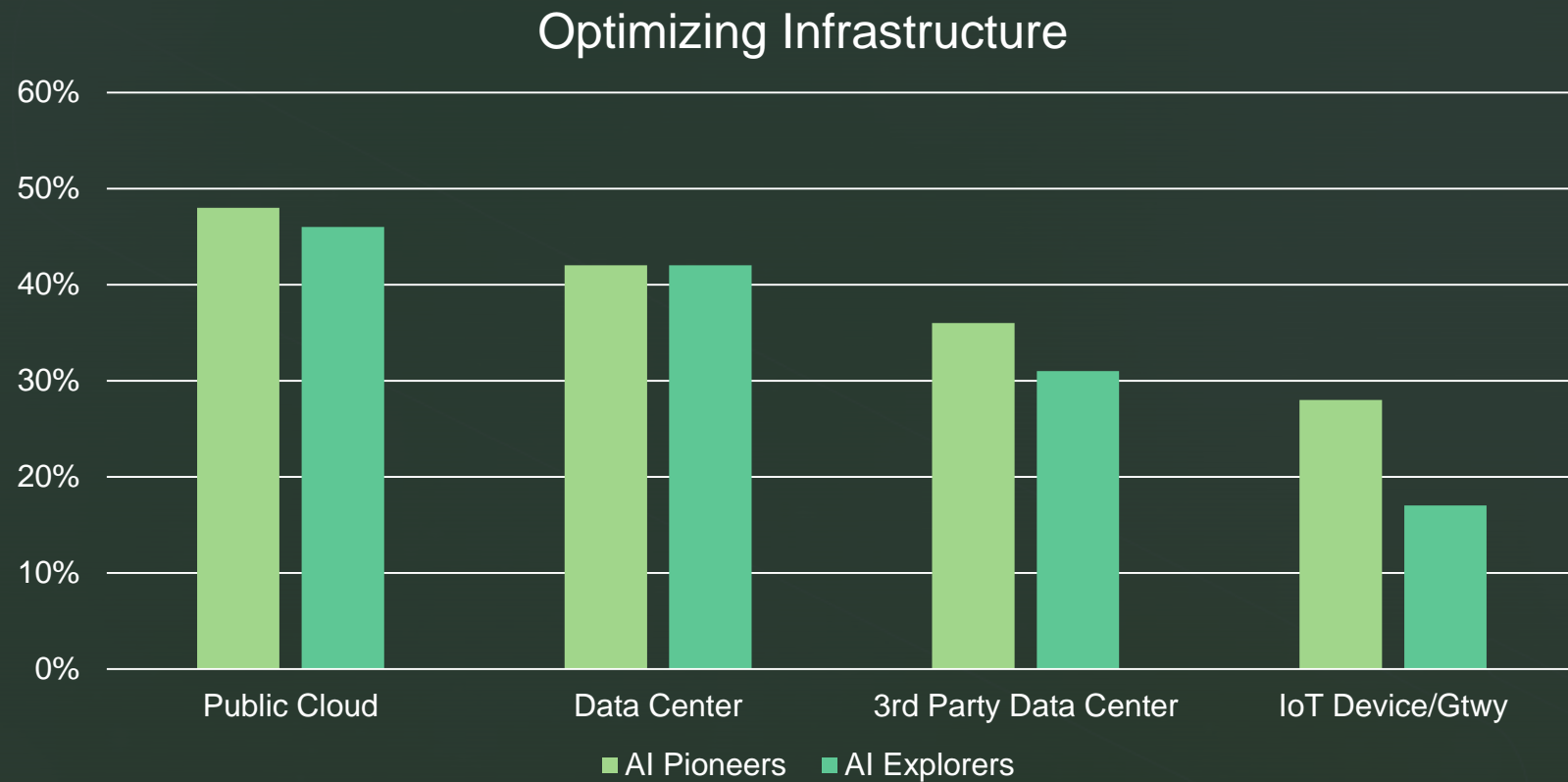| 28%	27%	16%	30%
Widely Implemented and driving critical biz	Implemented for a few use cases	Single use case or a few depts.	Minor components of a broader strategy

AI is Revenue Driven

Company Revenue

Chart legend: AI Pioneers (green), AI Explorers (blue)

Categories: $11M-$99M, $100M-$499M, $500M-$999M, $1B-$4.9B, $5B+
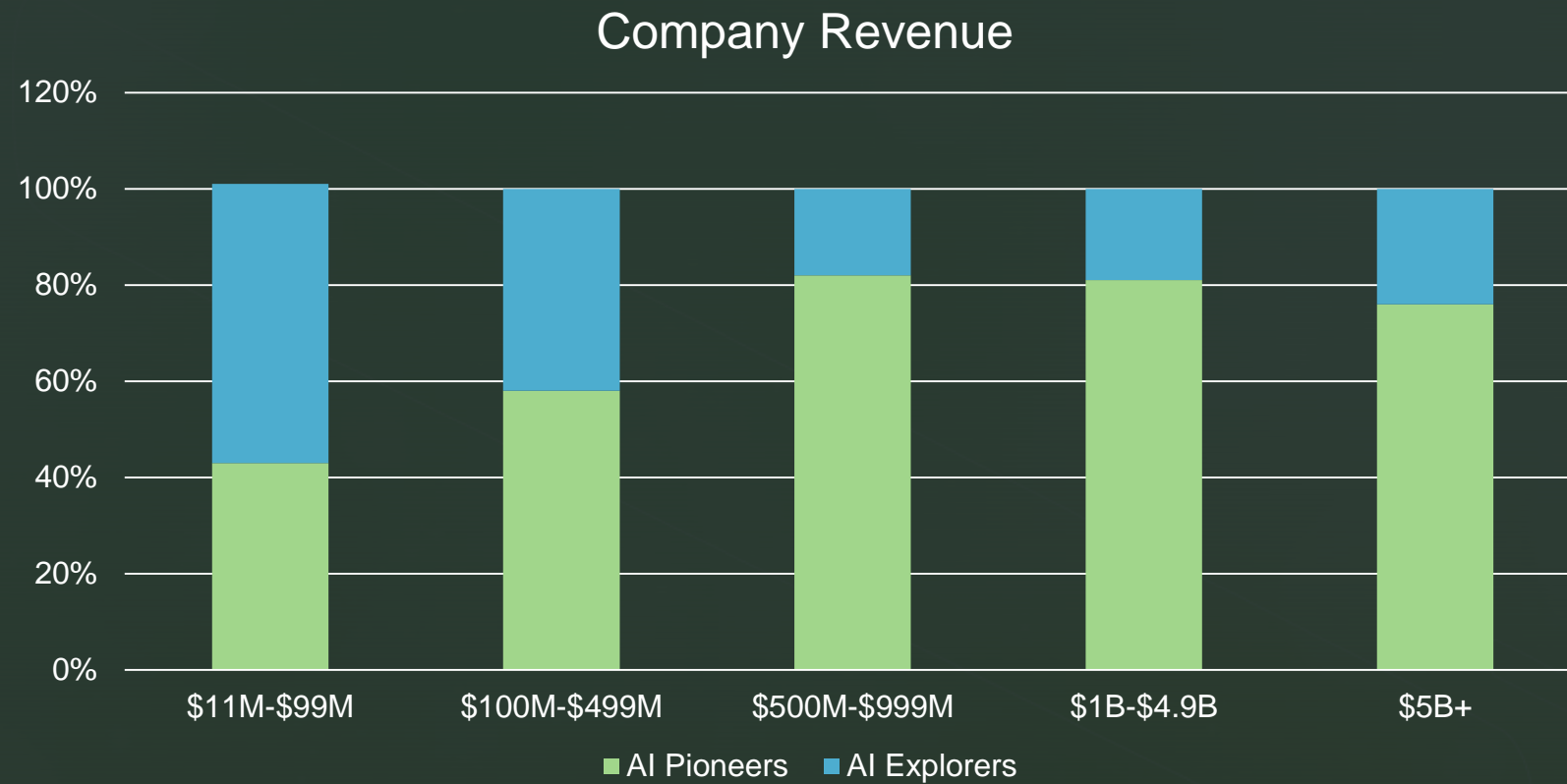
Top Challenges for IT with AI

Percentage of Challenge
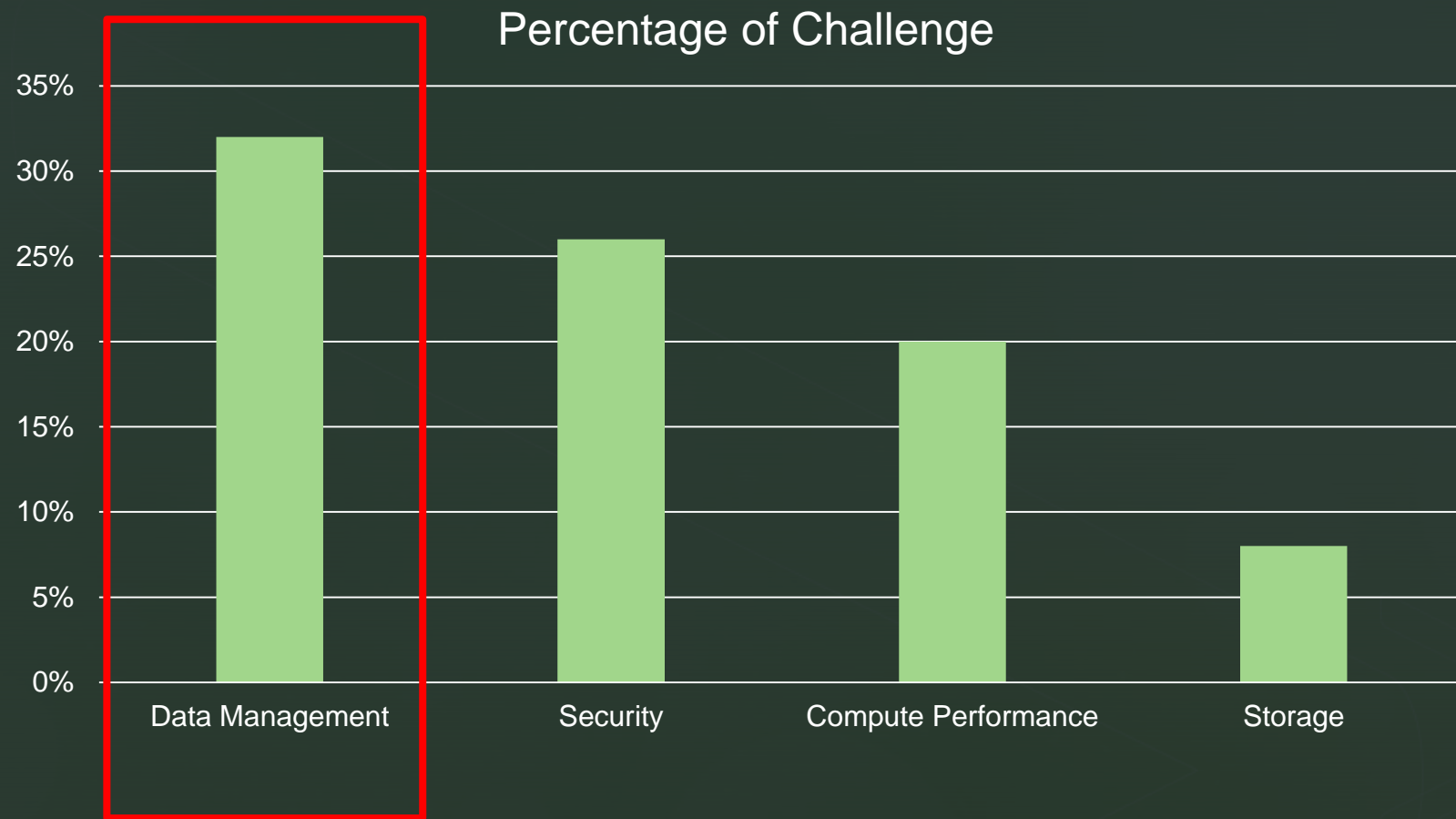
With More AI Comes More Cloud

Optimizing Infrastructure

All stats for these slides came from white paper from: http://www.spglobal.com/marketintelligence

Now the Good News

AI's Influence on the Tech Professional's Landscape

Automated Tasks: AI streamlines repetitive tasks, allowing technical professionals to focus on complex problem-solving.
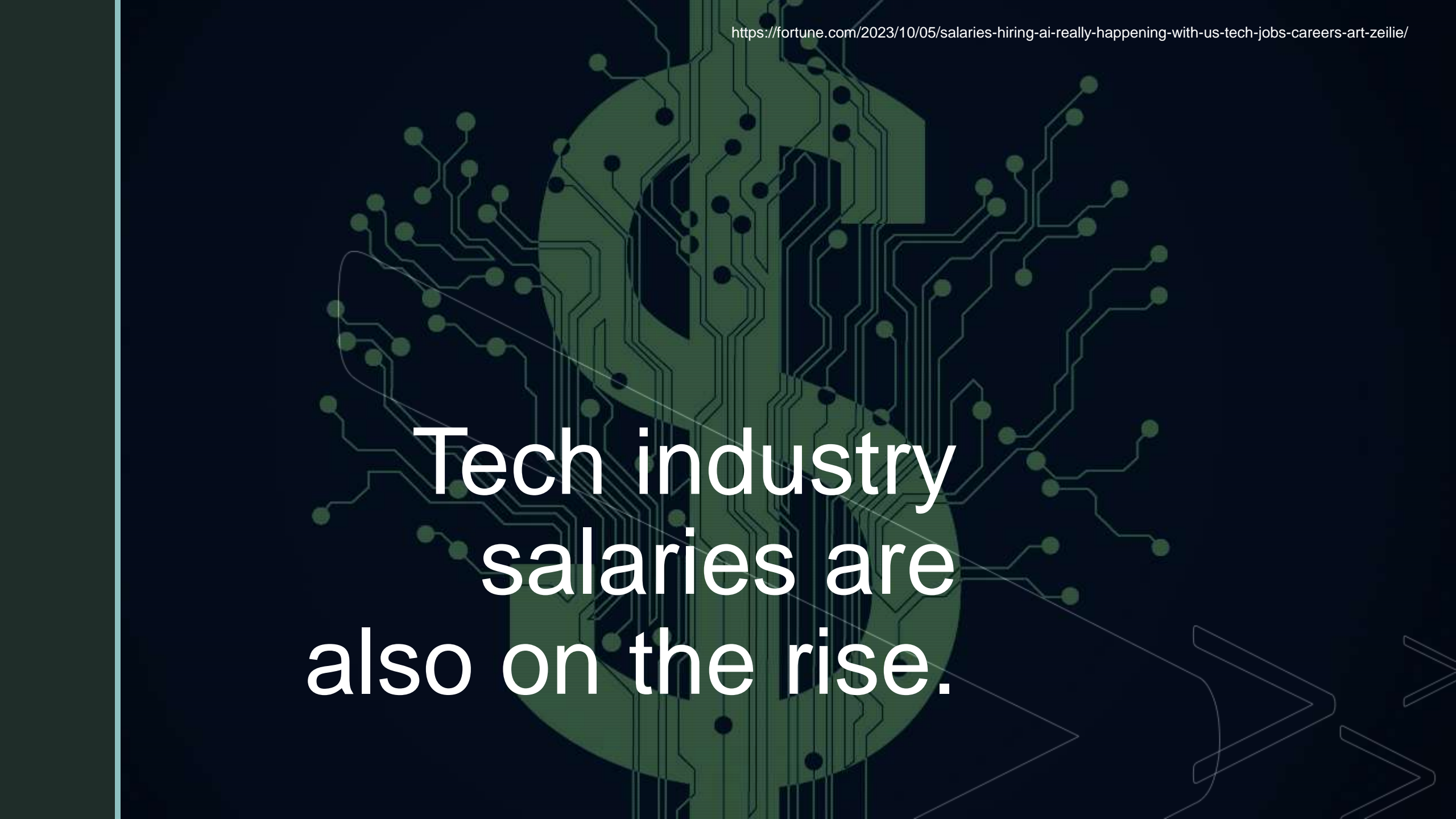
Data Analysis: Enhanced data analytics capabilities lead to more informed decision-making.

Continual Learning: AI's rapid evolution necessitates regular upskilling and adaptation.

New Opportunities: AI opens doors to innovative roles and projects, driving tech's frontier forward.

Ethical and Security Considerations: Professionals must navigate the ethical implications of AI deployment and usage.

Over 700K jobs open, (as of two weeks ago).

Tech industry salaries are also on the rise.

Average time an unemployed tech professional is unemployed, secures new employment of less than 2 months.

Of the 78 million jobs that AI will eliminate, there's an estimated 97 million new jobs AI will create.

Where are the jobs and Where aren't they?
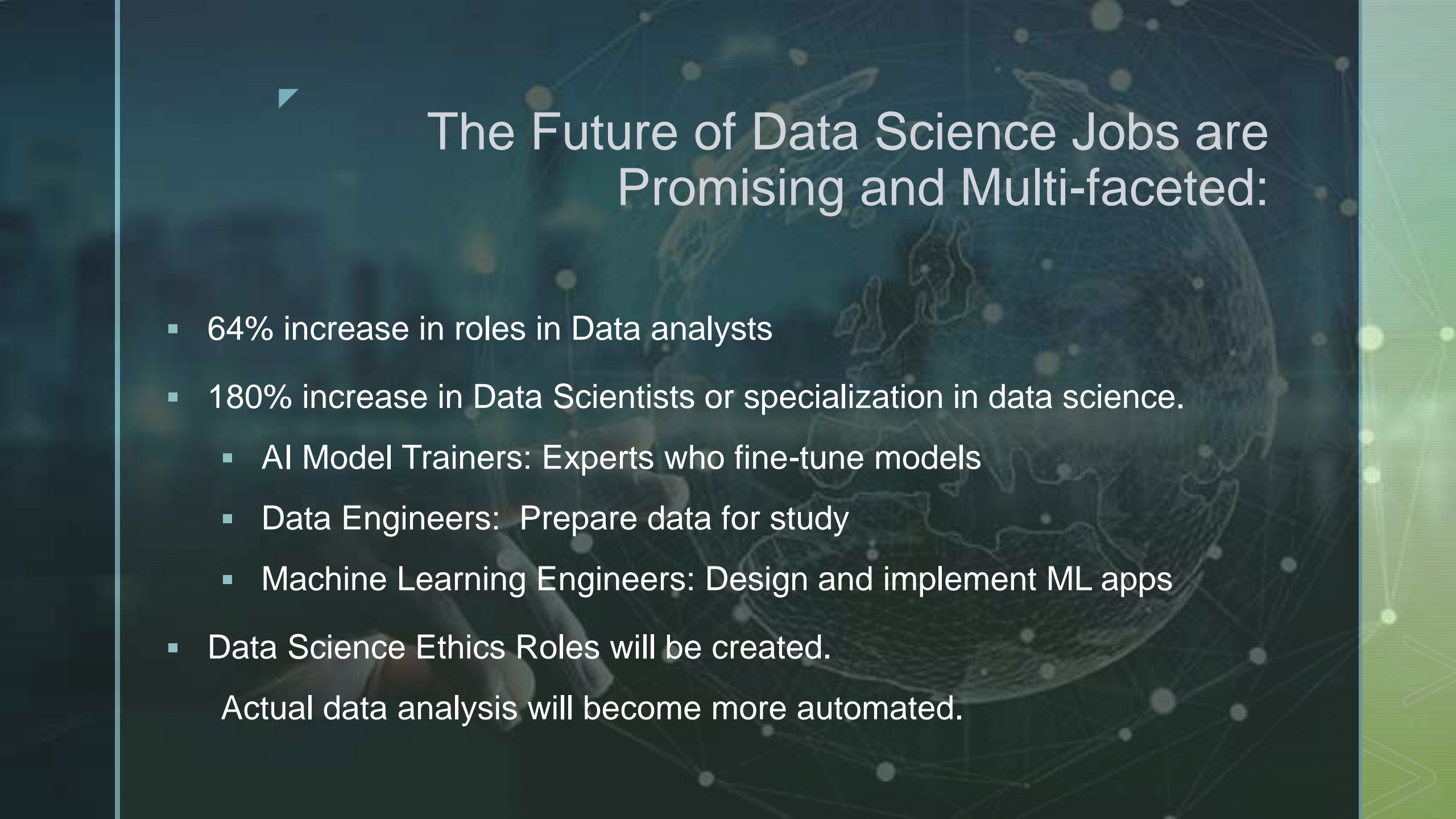
Cyber-Security Job Boom

The cybersecurity landscape is evolving rapidly, with old roles evolving quickly:

- Threat Hunter: Proactively seeks vulnerabilities before exploited by malicious actors.

- Cloud Security Specialist: Focuses on securing data and applications in the cloud.

- Security Consultant: Advises businesses on how to protect themselves from cyberattacks,

- Machine Learning/AI Security Specialist: Works at the intersection of AI and cybersecurity.

- Zero Trust Architect: Builds and implements zero-trust security model.

The Future of Data Science Jobs are Promising and Multi-faceted:

- 64% increase in roles in Data analysts

- 180% increase in Data Scientists or specialization in data science.
  - AI Model Trainers: Experts who fine-tune models
  - Data Engineers: Prepare data for study
  - Machine Learning Engineers: Design and implement ML apps

- Data Science Ethics Roles will be created.

    Actual data analysis will become more automated.

The Relational Database for the Win with Cyber Security

Principle of Least Privilege: Adopting a "never trust, always verify" approach, where network access is restricted based on need-to-know principles.

Micro-segmentation: Breaking up security perimeters into smaller zones to maintain separate access for separate parts of the network.

Existing security and policies: Protecting data will become more prevalent to protect all the data.

Same DBA Channel, Different DBA Day

- Technical positions will be up 84% and database will continue on.

- Those with soft skills, along with superior tech skills will overcome.

- Don't rely on just what you already know.

- Need to now know both cloud services and infrastructure, not just database platform.

- Automation of tedious tasks will continue to shift the DBA role and the title with it.

https://www.bls.gov/opub/mlr/2023/article/industry-and-occupational-employment-projections-overview-and-highlights-2022-32.htm

https://pega.com/future-of-it

The Return of the Relational Database…

- Structured data can assist in controlling "data sprawl".

- Data Quality and Integrity is more robust through decades of features.

- For advanced/complex AI and ML models, RDBMS scalability is often the go-to.

- New extensions for machine learning and AI are included in Oracle and SQL Server.

- Critical data and advanced RDBMS level security will win the day.

- Support of structured and unstructured data- the RDBMS becomes the evolved solution.

The DBA as the Cloud Specialist

- Cloud Solution Architect (CSA) in Data and AI OR infrastructure: Most common role for DBAs transitioning.

- Cloud Developer/Engineer

- Cloud Site Reliability Engineer: 2nd most popular for DBAs, especially backup/recovery specialists

Certifications can help, but only slightly.

Being the Bestest Consultant

- Go small tech and subcontract to Big Tech

- Know that big tech laid off the people they needed to "keep the lights on"

- Need varying specialists and generalists.

- Learn Data Analytics and AI

- Learn Cloud- Azure and GCP, (similar) and AWS services and infrastructure.

Avoiding Layoffs- Make Yourself More Bulletproof

- Communicate the value you bring, including a weekly status.

- Keep your LinkedIn profile up to date.

- Network and network more- start looking for your next job a year+.

- DON'T overwork on hours.   Outside of special situations, I recommend 45 hours a week to avoid burn-out.

- Don't let others waste your time- justify what you spend time on.

Tips for For Everyone

- Your Network is your Lifeline

- Redo your CV/Resume and pepper AI in everywhere…☺

- Pursue certifications if they provide you value and you are learning something you can use.

- Know cloud infrastructure and especially services.

- Pay more attention to what the role does than the title it's been granted in job searches.

If You Want To Build Your Own Role

- Are you hearing, "That's outside your role" or "We don't have anyone to fill that role." often?

- You should be passionate about the main focus of the potential role.

- It must encompass an area the business and a loss of revenue that can be proven.

- You must have the knowledge, skill and initiative.

- Carefully identify what the role should pay and be reasonable.

- Build out a full job description and what the value the job role, if filled will bring, including potential company revenue or savings.

Self Care (Yeah, it's Part of This)

40% of technical industry has stated mental health impact since the pandemic.

- Have hobbies outside of technical work, (even if it's doing geeky, technical stuff.)
- When you have a difficult day, do something for you.
- Have a network of individuals that you feel comfortable reaching out to for support.
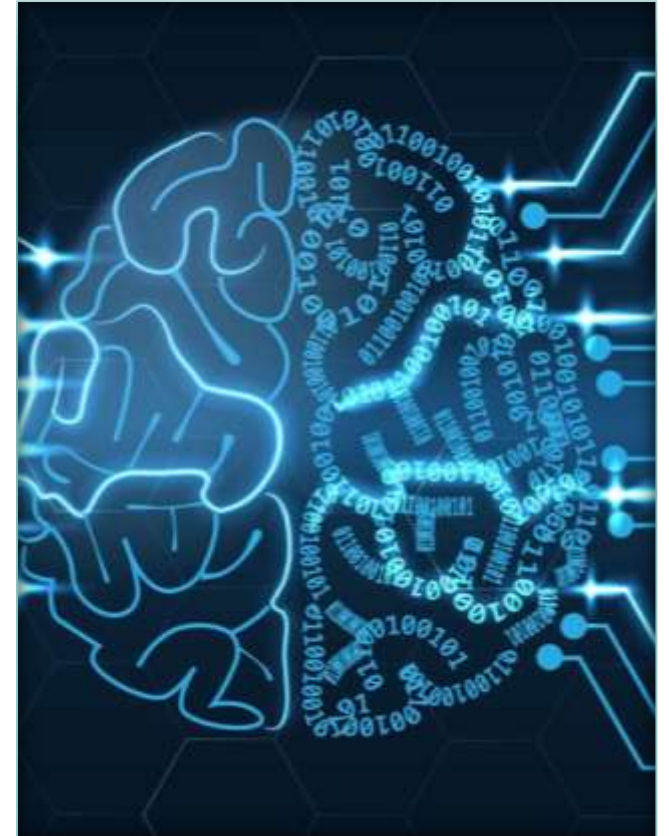- Control issues != true leadership skills

Remember, Don't Stagnate

- Learn new skills/technologies

- Bridge out to new roles or challenges

- Never neglect soft skills

- Shift from Negative Online Presence

- Foster networking skills

- Acceptance that change is the one thing that is constant.

What We've Learned

- **AI Isn't REALLY Coming for Our Jobs**

- **AI May Change Many of Our Jobs**

- **AI Will Add More Jobs Than it Will Remove.**

- **We CAN Pivot to Make Ourselves More Resilient to AI and Economic Downturn Change.**

- **We Can Reinvent Ourselves With New Titles While Doing Much the Same Job We Already Do**

- **Keep Skills Current and Move With AI, not Against It.**

Reference Links

- https://www.bls.gov/opub/mlr/2022/article/telework-during-the-covid-19-pandemic.htm

- https://www.mckinsey.com/industries/real-estate/our-insights/americans-are-embracing-flexible-work-and-they-want-more-of-it

- https://www.un.org/development/desa/dpad/publication/world-economic-situation-and-prospects-february-2021-briefing-no-146/

- https://sgp.fas.org/crs/misc/R46554.pdf

- https://www.cnn.com/2023/01/30/health/covid-learning-loss-study-wellness/index.html

- https://www.ey.com/en_us/real-estate-hospitality-construction/ey-survey-on-future-workplace-index

- https://www.weforum.org/agenda/2023/09/jobs-ai-will-create/

Thank you!

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