

Emerging/Existential Risk Deep Dive

Artificial Intelligence

C. Han Yang, PhD
Executive Director
Product Manager



Biographies



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Dina Collins, Executive Director

Relationship Manager

Dina Collins is a Relationship Executive for J.P. Morgan Commercial Bank, covering government entities including the State of California and local agencies. In her 15-year tenure at J.P. Morgan, she has directed client engagement for premier public and private entities across multiple lines of business, including: custodial banking, fixed income markets and asset management. Prior to joining J.P. Morgan, Dina was global services director at Janus Henderson. Dina started her career at Franklin Templeton in 1995, holding various marketing and sales management roles.

Dina is a graduate of University of California at Davis. She resides in San Francisco with her husband and two teenage sons who attend schools in the San Francisco Unified School District.



C. Han Yang, Executive Director

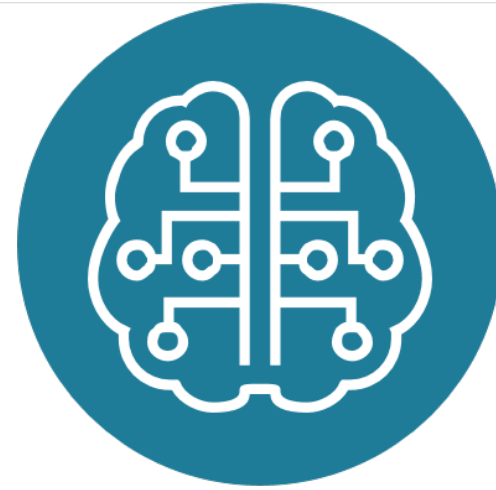
Product Manager

Han has always enjoyed driving disruptive technologies into business values. Currently, Han is an Executive Director at JP Morgan Chase building artificial intelligence services and machine learning platform in the cloud. Previously, Han was at Cisco Systems, where he drove solutions for artificial intelligence, machine learning, and big data on Cisco servers. In addition, Han lead the industry's first software defined networking switch. Han has a PhD in Electrical Engineering from Stanford University.

Here's his LinkedIn profile <https://www.linkedin.com/in/hanyang/>

When you think of **Artificial Intelligence**...
what comes to mind?

Agenda



Artificial Intelligence
Disruptive Technology



AI Risks & Opportunities
Finance and Education



AI Governance
Leverage AI for You

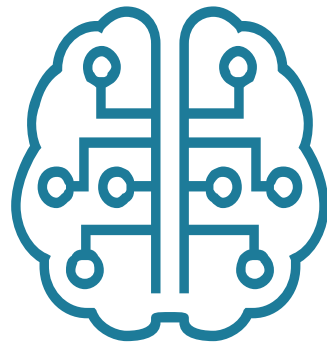
Artificial Intelligence, Machine Learning, and Deep Learning

Artificial Intelligence
Mimic human behavior
Play Checkers



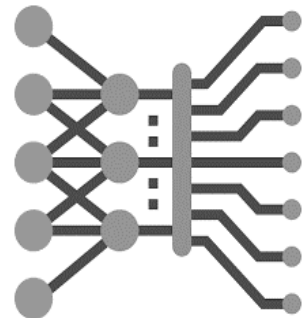
Artificial Intelligence

Machine Learning
Learn from Data
Linear Regression

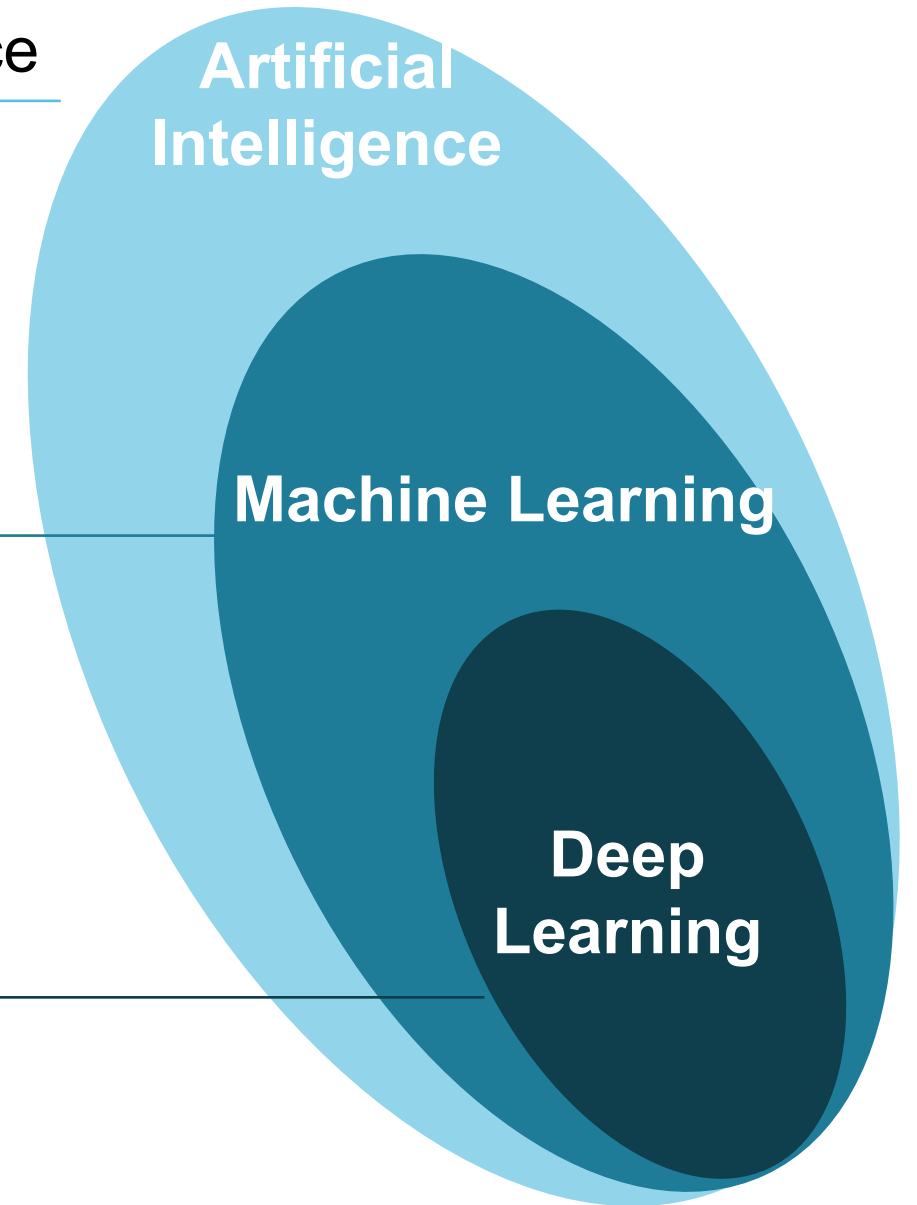


Machine Learning

Deep Learning
Multi-layer Neural Network
Recognize Cats & Dogs

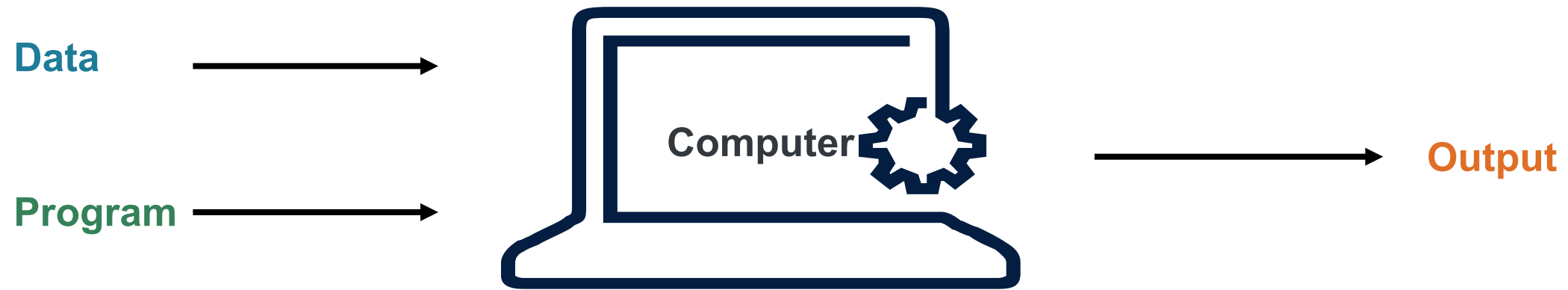


Deep Learning

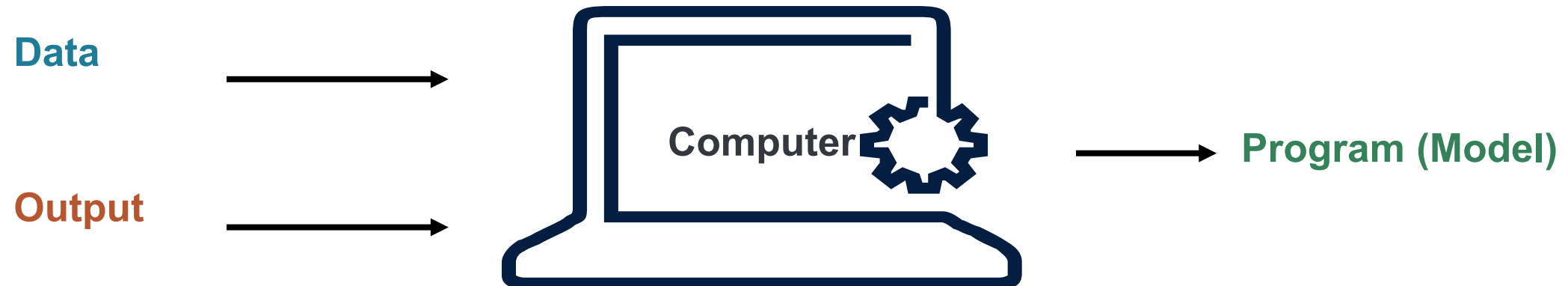


Traditional Programming Vs Supervised Machine Learning

Traditional Programming



Supervised Machine Learning



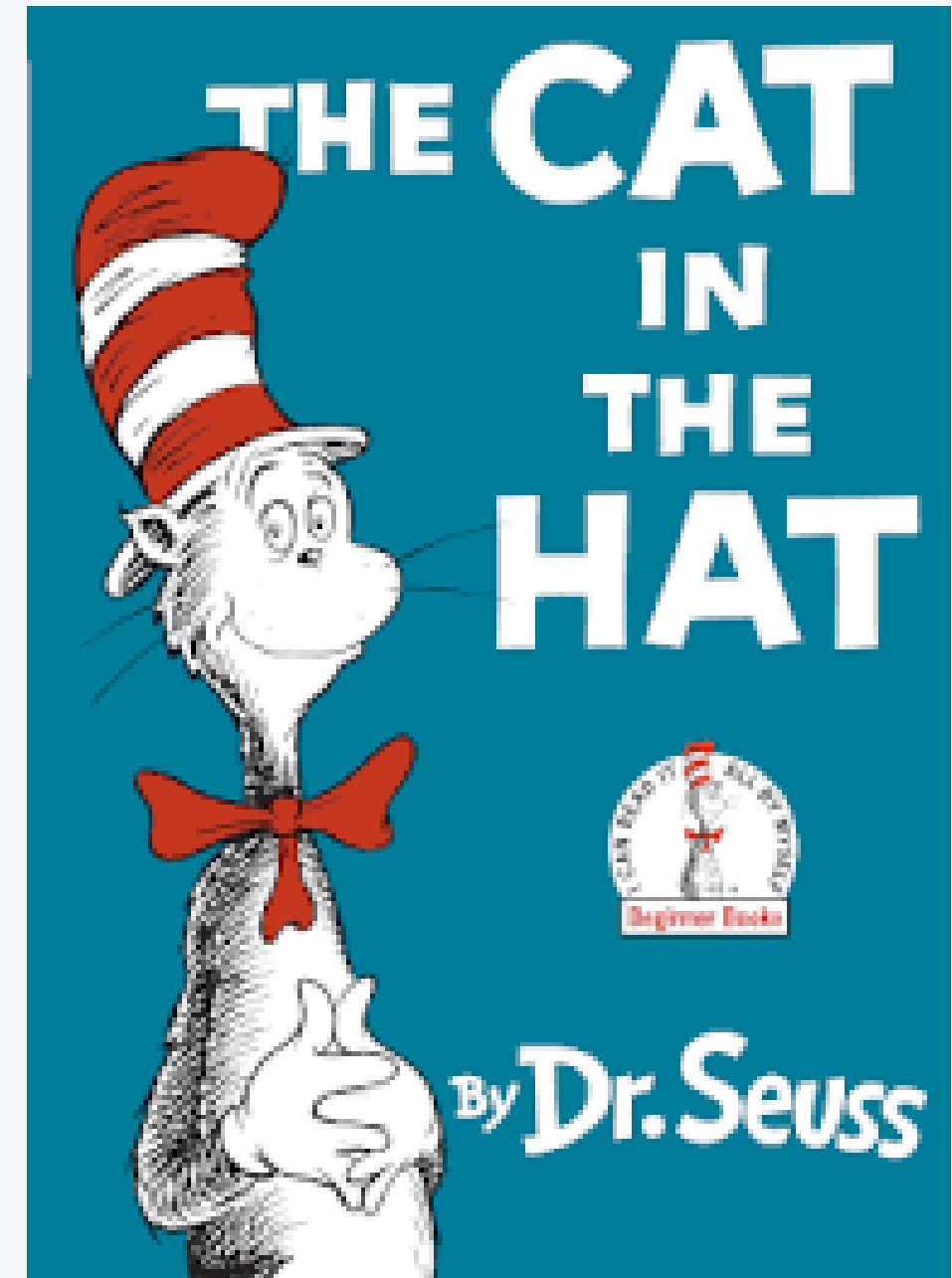
Predict the Next Words:

The sun did not shine.

It was too wet to play.

So, we sat in the house

All that cold, cold, wet day



Large Natural Language Models



- Donated text from around the world
- 176 billion parameters
- July, 2022

Customer Agent

Audio Transcription

Detect sentiment?

Natural Language Processing

Topic classification

Search

Optimal documents that can help customer



Call Summarization

What are the follow-on action items?

Coaching

How can human agent improve?

AI Voice?

Should AI talk to the customer directly? In a tone / language familiar with customer?

*Customer Agent experience not related to JPMC customer experience



ESG Investment

- How to process documents and evaluate ESG investment?
 - Translate docs into English
 - Extract tables and charts
 - Natural language processing for key terms
 - Extract information into knowledge graph
 - Search across supply chain
 - Evaluate ESG Score

Credit Rating with Alternative Data

Do you charge your phone often?



Privacy Concern?

Social Media Network for Credit Risk

Benefits and Risks of AI in Education

Personalization

Individualized help for Students
Less human interaction?

Tutoring

Customized Support

Grading

Compile student performance, even grade essays
AI generated essay?

Course Feedback

Identify concepts that students miss

Student Feedback

Immediate feedback to improve
Loss in tenacity?

AI Center of Excellence



Central Organization Dedicated to Artificial Intelligence and
Machine Learning



AI Center of Excellence

Create Vision for AI

Identify Use Cases

Get End Users Involved

Develop AI Champions



Create Vision for AI

How would **CalSTRS** like to use AI?

Identify Use Cases

With Responsible AI

Get End Users Involved

Get buy-in from users

Develop AI Champions

Rinse and repeat for continued growth

Responsible Artificial Intelligence

01 **Fairness**

- Society challenge: What is fair?
- Technology challenge

02 **Inclusiveness**

- Voice recognition: Just American English or more diverse?

03 **Reliability & Safety**

- Movie recommendation or autonomous driving?



04 **Transparency**

- How & why did the model come to a decision?

05 **Privacy & Security**

- Who owns the data?
- Where is the data?
- Personal data?

06 **Accountability**

- Accountable for how the technology impacts the world
- Facial recognition: Civil liberty

Regulations



European Union Artificial Intelligence Act

Q&A

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