



# Where Machine Learning Meets Academic Learning

Matt Kirchner



Ancestry.com uses machine learning to help correspond genetic data to ancestries.





## Programming Languages



## Application Frameworks



TensorFlow



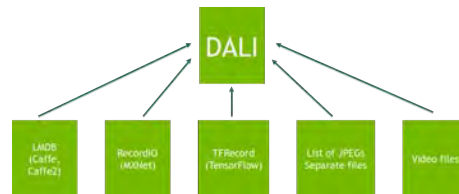
Microsoft  
Cognitive  
Toolkit



PyTorch



## GPU-accelerated Libraries



## Cloud Deployment



Google Cloud

# Opinion-size-age-shape-color-origin-material-purpose



Lovely little old rectangular green French silver whittling knife

Old little French whittling lovely silver rectangular green knife

My Greek Fat Big Wedding

My Walking Leather Brown Boots

Green Little Men

I, A, O

Mish-Mash

Mash-Mish

Chit-Chat

Chat-Chit

Dilly-Dally

Dally-Dilly

Shilly-Shally

Shally-Shilly

Tip-Top

Top-Tip

Hip-Hop

Hop-Hip

Flip-Flop

Flop-Flip

Tic-Tac

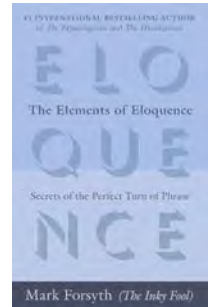
Tac-Tic

Ding-Dong

Dong-Ding



Source:





# Experimental Evidence on the Productivity Effects of Generative Artificial Intelligence

Shakked Noy  
MIT

Whitney Zhang  
MIT

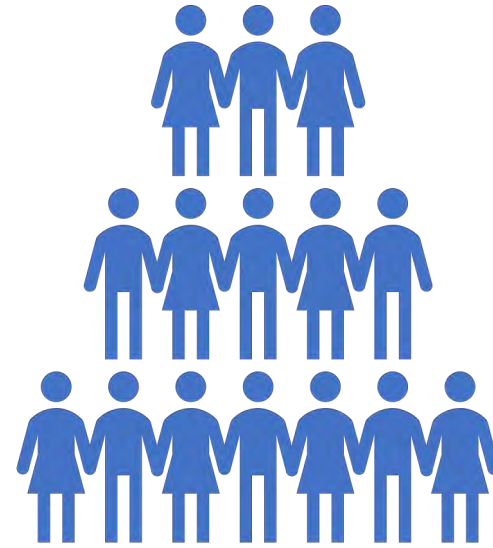
March 2, 2023  
Working Paper (not peer reviewed)





## 20-30 Minute Assignments

- Delicate Emails
- Grant Applications
- Analysis



444 College-educated Professionals

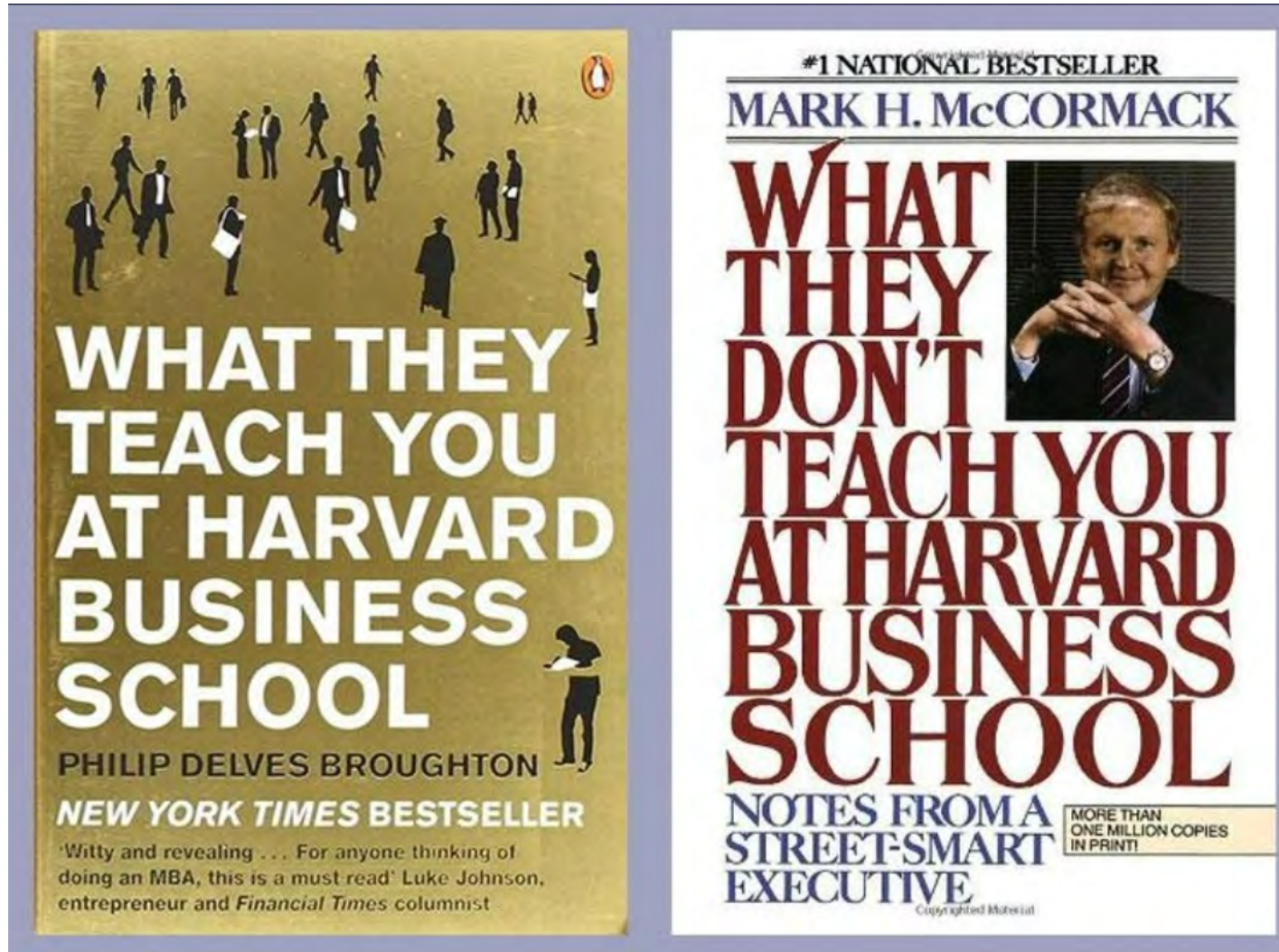
- Marketers
- Grant Writers
- Consultants
- Data Analyst
- HR Managers



ChatGPT



# These 2 Books Contain....



## The Sum of All Human Knowledge

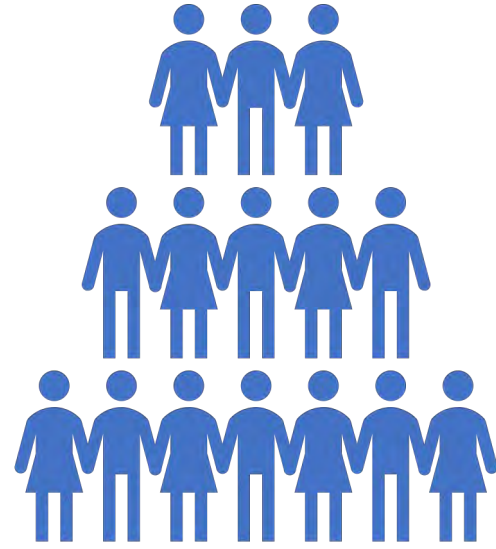
Source: [imgur.com](http://imgur.com)





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- Delicate Emails
- Grant Applications
- Analysis



444 College-educated Professionals

- Marketers
- Grant Writers
- Consultants
- Data Analyst
- HR Managers



10 minute (37% decrease) in time

Quality of work improved for many workers

Chat GPT substantially increased job satisfaction





## Time to 100 million Users

**Yellow Pages**                      **75 Years**

**Smart Phone**                      **15 Years**

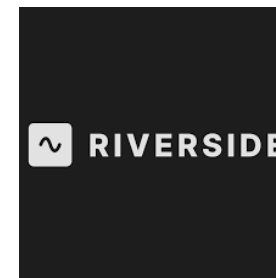
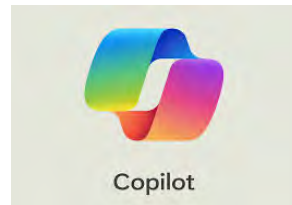
**Chat GPT**                              **2 Months**



**ChatGPT**

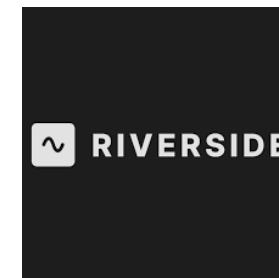
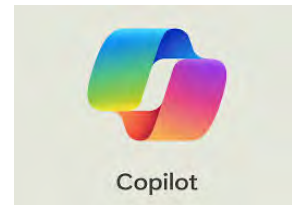
About 20% of employed adults said they have used OpenAI's ChatGPT for work as of February 2024, up from 8% a year ago, according to Pew Research Center.

Source: The Smartest Way to Use AI at Work. Cordilia James. WSJ 4/18/2024



About 20% of employed adults said they have used OpenAI's ChatGPT for work as of February 2024, up from 8% a year ago, according to Pew Research Center.

Source: The Smartest Way to Use AI at Work. Cordilia James. WSJ 4/18/2024



# **YOUR SMARTPHONE IS A WALKING SMART SENSOR**

## **(THE 23 SENSORS OF SMART PHONES)**



- 1. Accelerometer**
- 2. Ambient Light Sensor**
- 3. Barometer (air pressure)**
- 4. Blood / Oxygen Sensor**
- 5. Capacitive Scanner**
- 6. Fingerprint Sensor**
- 7. Global Positioning System**
- 8. Gyroscope**
- 9. Hall Sensor (case)**
- 10. Heart Rate Sensor**
- 11. Humidity Sensor**
- 12. Infrared Sensor**
- 13. LIDAR (laser light)**
- 14. Magnetometer (compass)**
- 15. NFC (radio communication)**
- 16. Optical Scanner**
- 17. Proximity Sensor**
- 18. Soli Sensor (radar module)**
- 19. Temperature Sensor**
- 20. Touchscreen**
- 21. U1 Chip**
- 22. Ultrasonic Sensor**
- 23. UV Sensor**

# cloud



## Smartphone

Cloud

Spotify  
Safari

Fog

ISP

Transmission

WiFi Router,  
Modem

Control  
System

Smartphone

Sensor

23 Sensors of  
Smart Phones

System

Our Activity



## edge







38 Special

Andy Grammer

Ariana Grande

Billy Joel

The Bleachers

Blink 182

The Bo Deans

Boston

Brooks & Dunn

Chance the Rapper

Chuck Mangioni

Crowded House

Death Cab for Cutie

DJ Jazzy Jeff & the Fresh Prince

Elton John

EPMD

Fall Out Boy

Fleetwood Mac

Foghat

Foo Fighters

Freddy Jones Band

Garth Brooks

Green Day

Haim

Jimmy Buffet

John Mellencamp

The Killers

Lorde

Machine Gun Kelly

Milli Vanilli

Mondo Cosmo

Paula Abdul

The Outfield

The Police

Public Enemy

Run DMC

Sammy Kershaw

Shawn Mendez

The Shins

Simon & Garfunkel

Spyro Gyra

Squeeze

Taylor Swift

The Violent Femmes

The Wallflowers

Weezer

*When You Listen* *Every Pause* *Every Shuffle* *Speed* *Location* *Every Start* *Every Tap*  
*When You Stop* *Genres* *Metatags* *History* *Searches* *Identity* *Username*



# Spotify®

*email* *Phone #* *DOB* *Address* *Country* *Billing Data* *Device Type*  
*Other Accounts* *Bank Details* *Your Followers* *Who You Follow* *SM Activity* *IP Address* *Operating System*

# cloud



	Smartphone	Manufacturing	Precision Agriculture	Energy	Healthcare	Food Production	Defense
Cloud	Spotify Safari	MLinki ZDT	Farmworks Smartfarm	GOHFER FRACPRO	EPIC, Cerner	Batchmaster FoodReady	Siemens Defense Cloud
Fog	ISP	ISP	ISP	ISP	ISP	ISP	Link 16, Link 22
Transmission	WiFi Router, Modem	Computer Network	Cell Tower	Cell Tower	Computer Network	Computer Network	Encrypted Drive
Control System	Smartphone	PLCs	PLCs	SCADA, PLCs	MRI, Ultrasound	PLC	Gun Data Computer
Sensor	23 Sensors of Smart Phones	Temp, Prox, Ultrasonic	Moisture, O2, Temp	Pressure, Level, Flow	Heartrate, PulseOx, Glucose	Prox., Temp, Humidity, Photoelectric	Infrared, Electro-optical
System	Our Activity	CNCs, Robots, Conveyors	Soil, Field Equipment, Livestock, Irrigation	Drilling Equipment, Shale Gas	Human Body	Mixers, Blenders, Packers, Fillers	Vehicles, Drones Weapons Systems

# edge



# I Know 4,964 People

Beighley  
Bohlen  
Cady  
Cattelino  
Cicco  
Coene  
Cook  
Dietrich  
Dover  
Frohna  
Gamache  
Gietl  
Hill

Hipp  
Idle  
Katz  
Keffer  
Kuharske  
Lovell  
MacLeish  
Malatesta  
Marzetta  
Moore  
Mortenson  
Mulligan  
Palumbo

Pasdo  
Payne  
Pepke  
Rakow  
Reader  
Rhyner  
Schill  
Sewart  
Sharpe  
Shiels  
Wacker  
Weber  
Weller

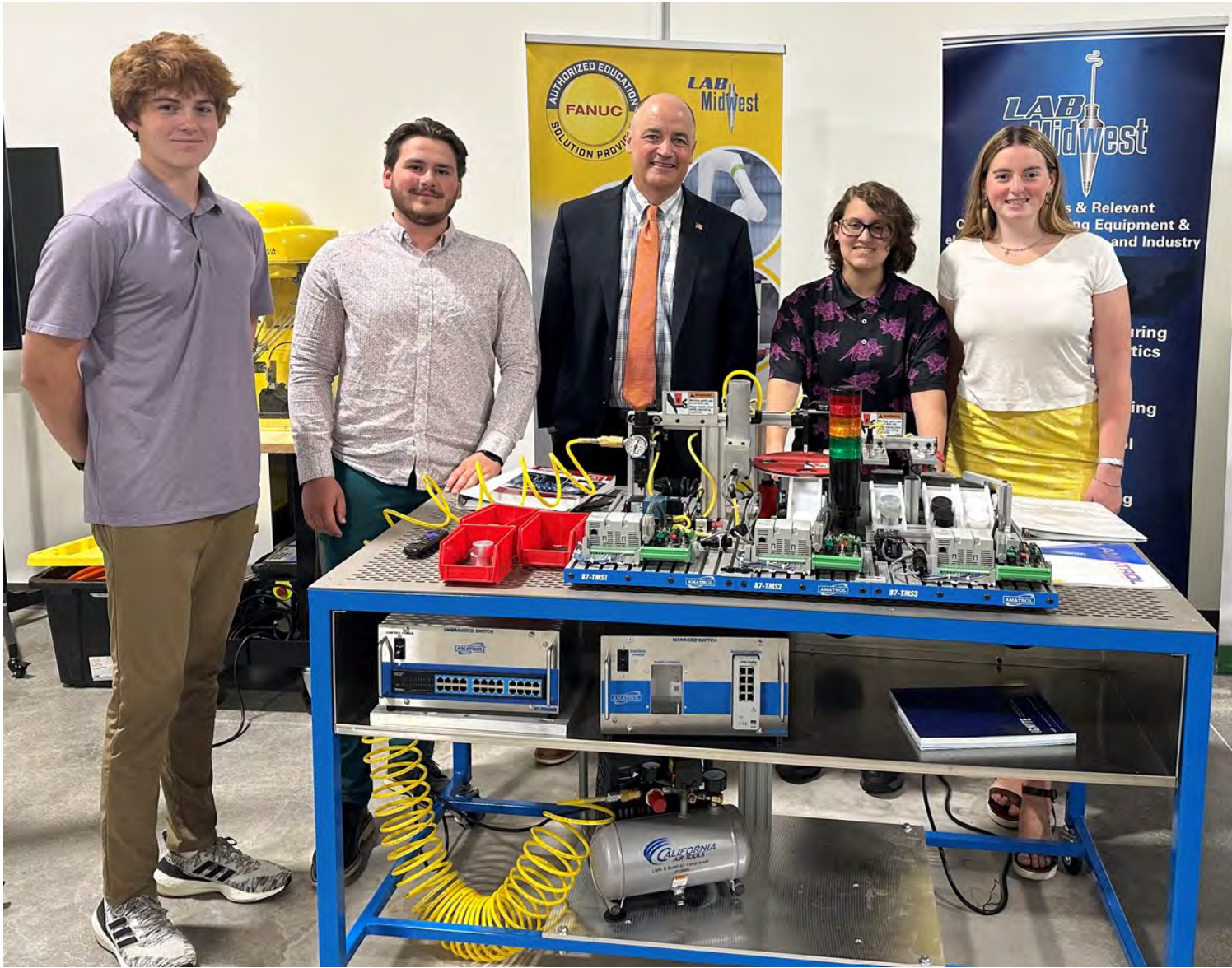
## Know:

I know them  
They know me by sight or name  
I could contact them  
They live in the USA  
Some contact in the last 2 Years

Average Person Knows	611 People
Average Person	4.8 Michaels
AI	127.29 People / Michael
I know	39 Michaels
I know	4,964 People

Tyler McCormick, professor of statistics and sociology at the University of Washington

Source: WSJ, You Probably Know 611 People, Zumbrun, Nov 16, 2023



WAUKESHA  
COUNTY TECHNICAL  
COLLEGE

Hands-on  
Higher Ed



UNIVERSITY OF  
NOTRE DAME



HOMESTEAD  
HIGH SCHOOL



LEHIGH  
UNIVERSITY



UNIVERSITY  
of VIRGINIA



UNIVERSITY OF  
St. Thomas  
MINNESOTA



Published 9/1/2019

## 25 Lessons in 25 Years

In my own little way of commemorating 25 years in executive leadership, I offer the 25 most valuable lessons I've learned in 25 years.

#management



**MATTHEW KIRCHNER**   
Columnist, Profit 360, LLC

### SHARE



### READ NEXT

> [Highlights from SUR/FIN 2023](#)

It ended up being the most life-changing meeting of my career and it all began when I answered the phone on my desk. On the other end of the line was a prominent investment banker who chaired the board of directors of the company for which I was controller, a position I had accepted only months before.

Earlier that day, I had learned that the company's president and vice president had been unexpectedly fired from their positions. As the chairman summoned me to his posh downtown office about 30 minutes from mine, I knew that my time working for my then employer would soon come to an end. I abruptly collected the personal items from my office and walked through the facility one last time before settling into my car for the half-hour drive.



**GARDNER**  
Business Media, Inc.

# #4: You don't need to know everything about something in order to use it.





# Don't Need to Understand AI to Use AI



**Edward Felten, Princeton**

**Manav Raj, U Penn**

**Robert Seamans, NYU**

# **1,016 Job Categories 36 Unlikely to Overlap with AI**

## **Most of the Top 20 College Professors**

**How will Language Modelers like ChatGPT Affect Occupations and Industries?**

Source: Co-Intelligence, Mollick, 2024

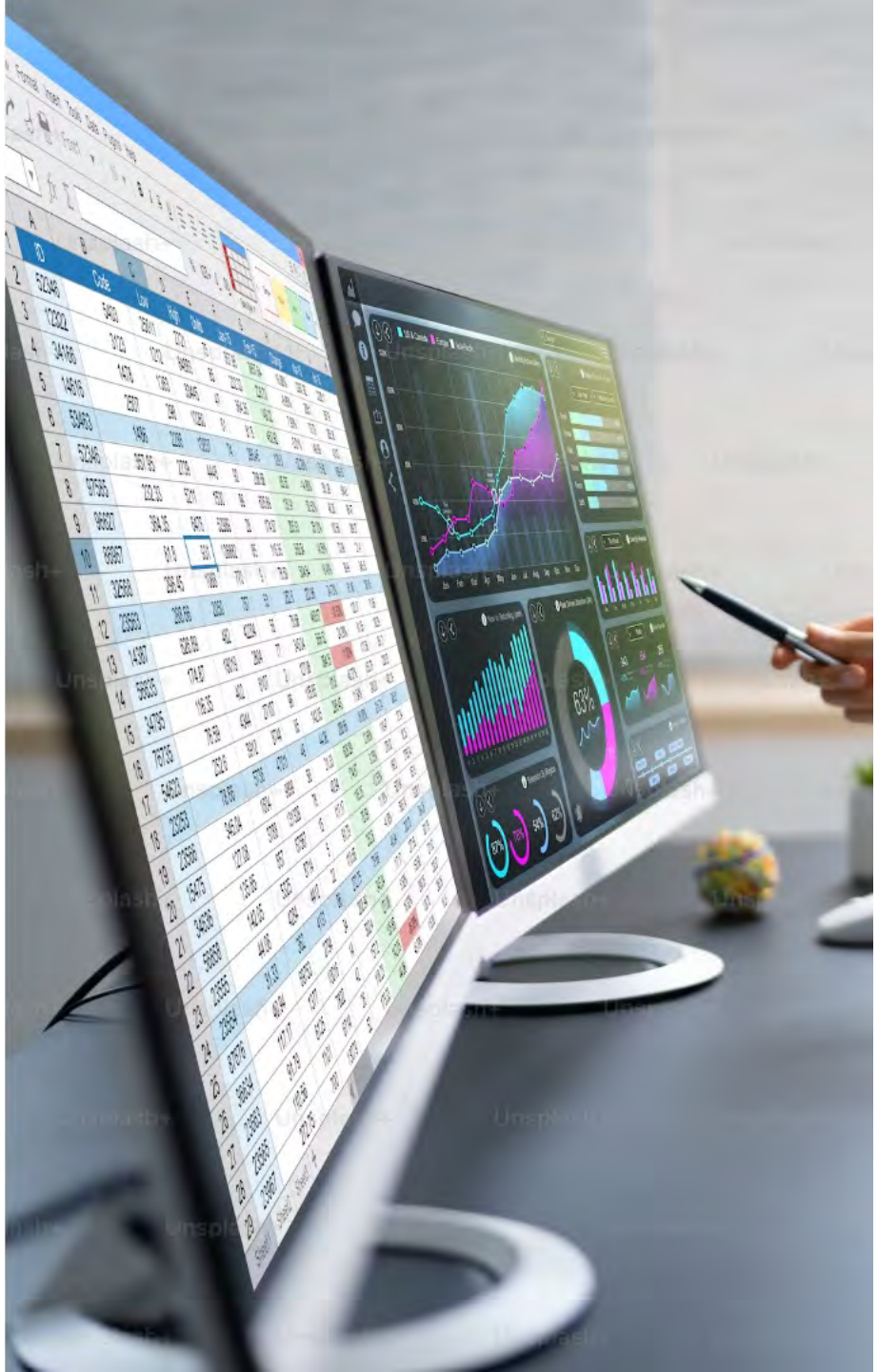


# Will AI Replace Educators?



# NO!

**Educators Embracing AI Will  
Replace Those Who Don't**



Have you ever used ChatGPT to write you an Excel macro

I did yesterday and it was life changing



“I always say please and thank-you to ChatGPT because when the robots take over I want them to like me.”



# AI in Education Questions



How do I protect my job from AI?

Will AI replace my campus?

If a student uses AI to complete their coursework  
are they really learning?

How do we prevent students from using  
ChatGPT?



# AI in Education Questions



How can AI make education more affordable, efficient and effective?

How can AI better leverage the time of faculty and staff?

What should we teach when software can answer every question?

How do we revalue and redefine what we mean by intelligence?

If our aim is to prepare students for life, what is life in the age of AI?

How do we leverage AI to assess student learning?

How do we educate students on the risks of AI?

Instead of prohibiting Chat GPT should we make it mandatory?

# WHAT DOES THIS MEAN FOR EDUCATION?

1. **PERSONALIZED LEARNING**
2. **THE DEATH OF THE LECTURE**
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5. **CHAT-GP-CHEATING**
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# A Smart Lamp That Watches Kids When They Study Is a Hit in China

The product, made by TikTok owner ByteDance, monitors study habits and offers aid to students—but also raises privacy issues

Source: Wall Street Journal

Recommends appropriately challenging stories, listens,  
intervenes

Identifies students at risk of dyslexia with 99% accuracy

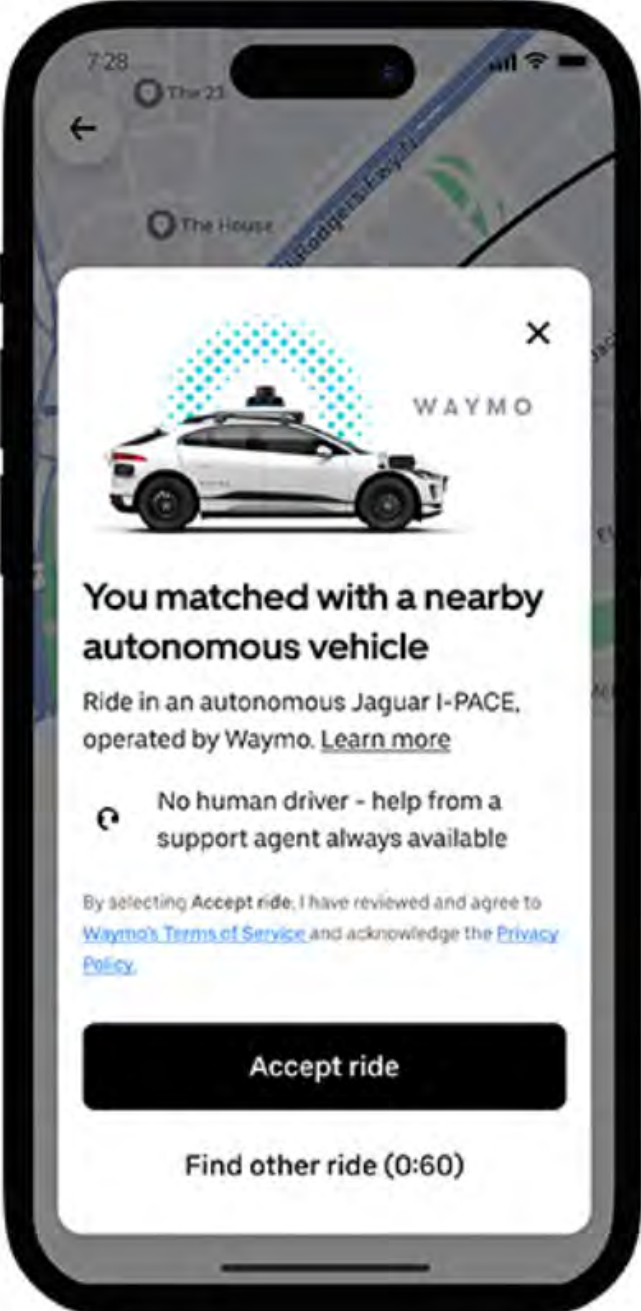







U B E R





**You matched with a nearby autonomous vehicle**

Ride in an autonomous Jaguar I-PACE, operated by Waymo. [Learn more](#)

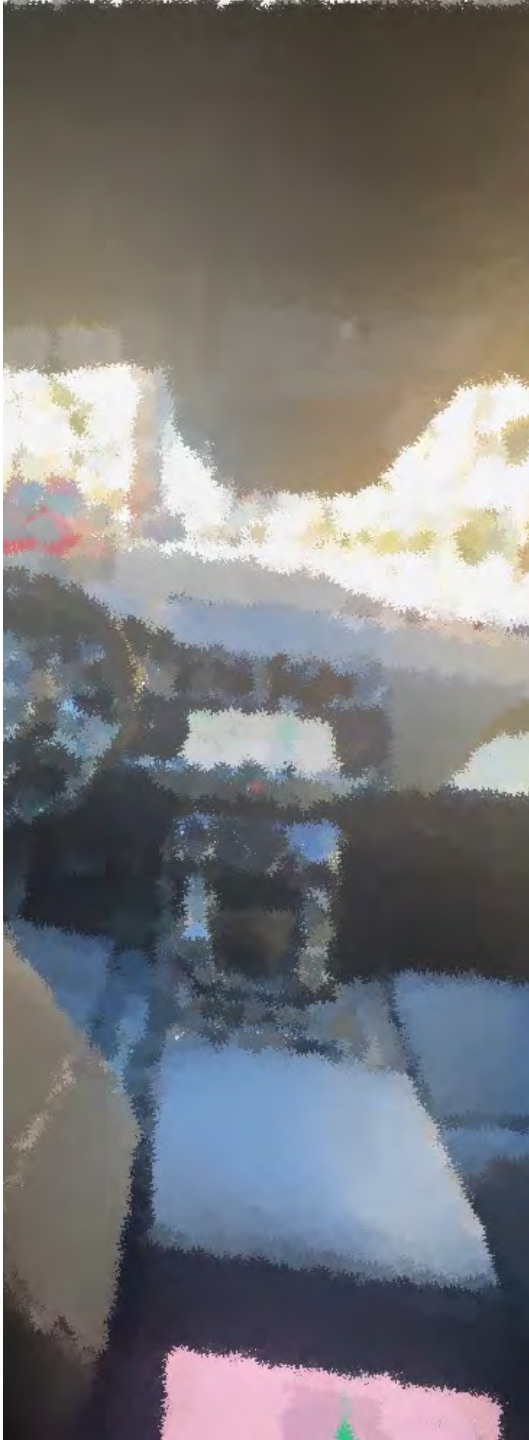
 No human driver - help from a support agent always available

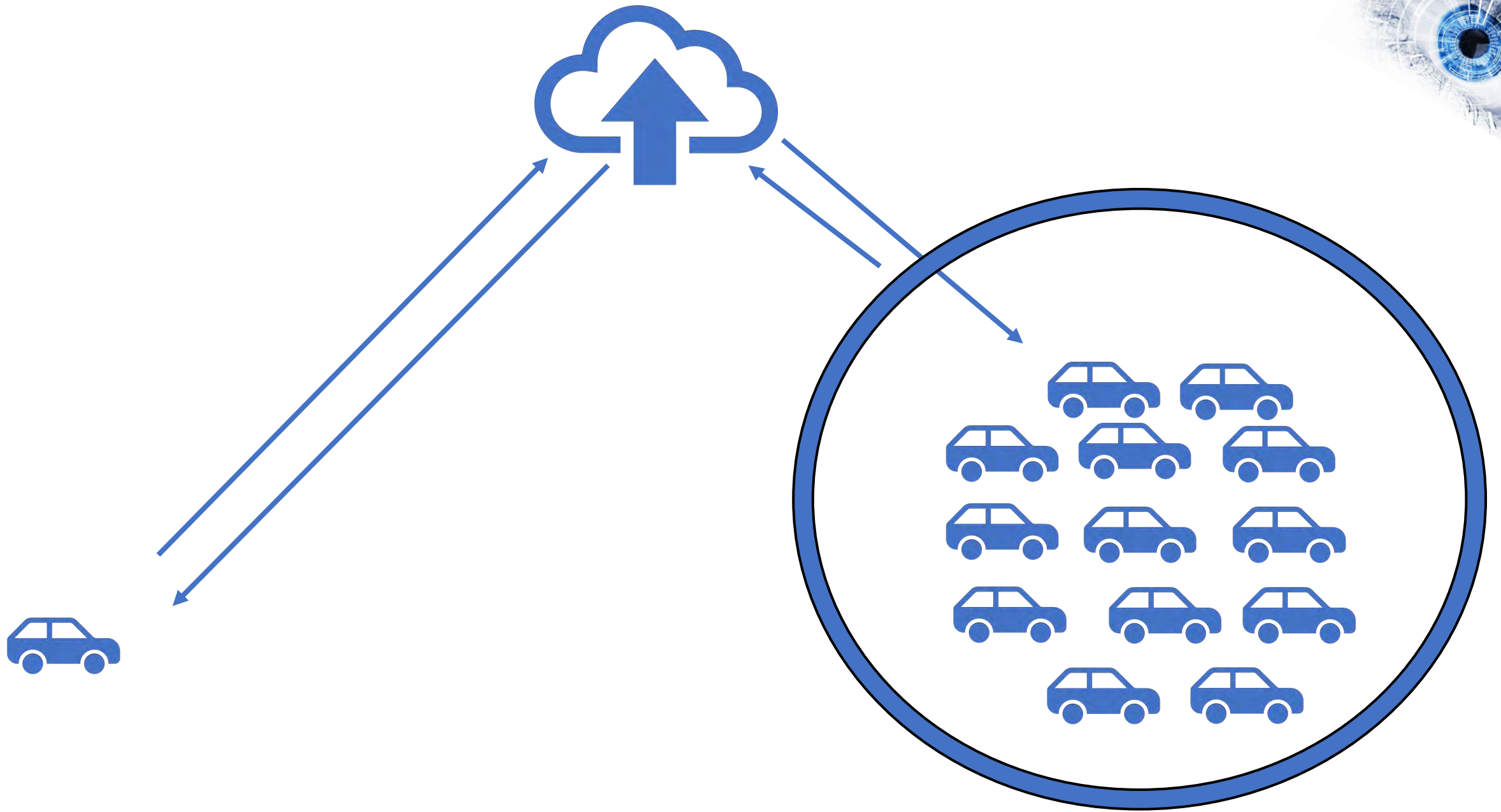
By selecting [Accept ride](#), I have reviewed and agree to [Waymo's Terms of Service](#) and acknowledge the [Privacy Policy](#).

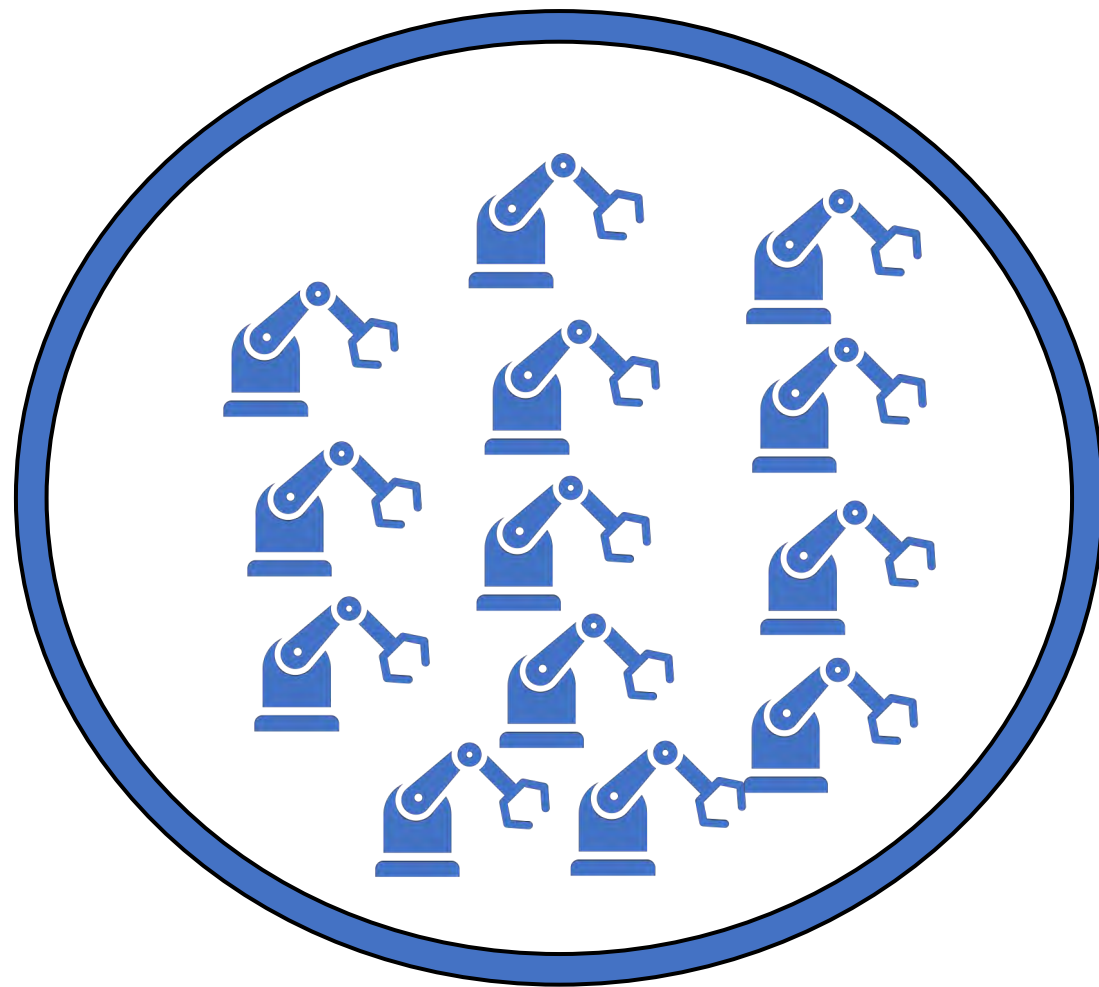
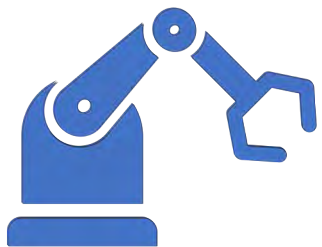
**Accept ride**

Find other ride (0:60)







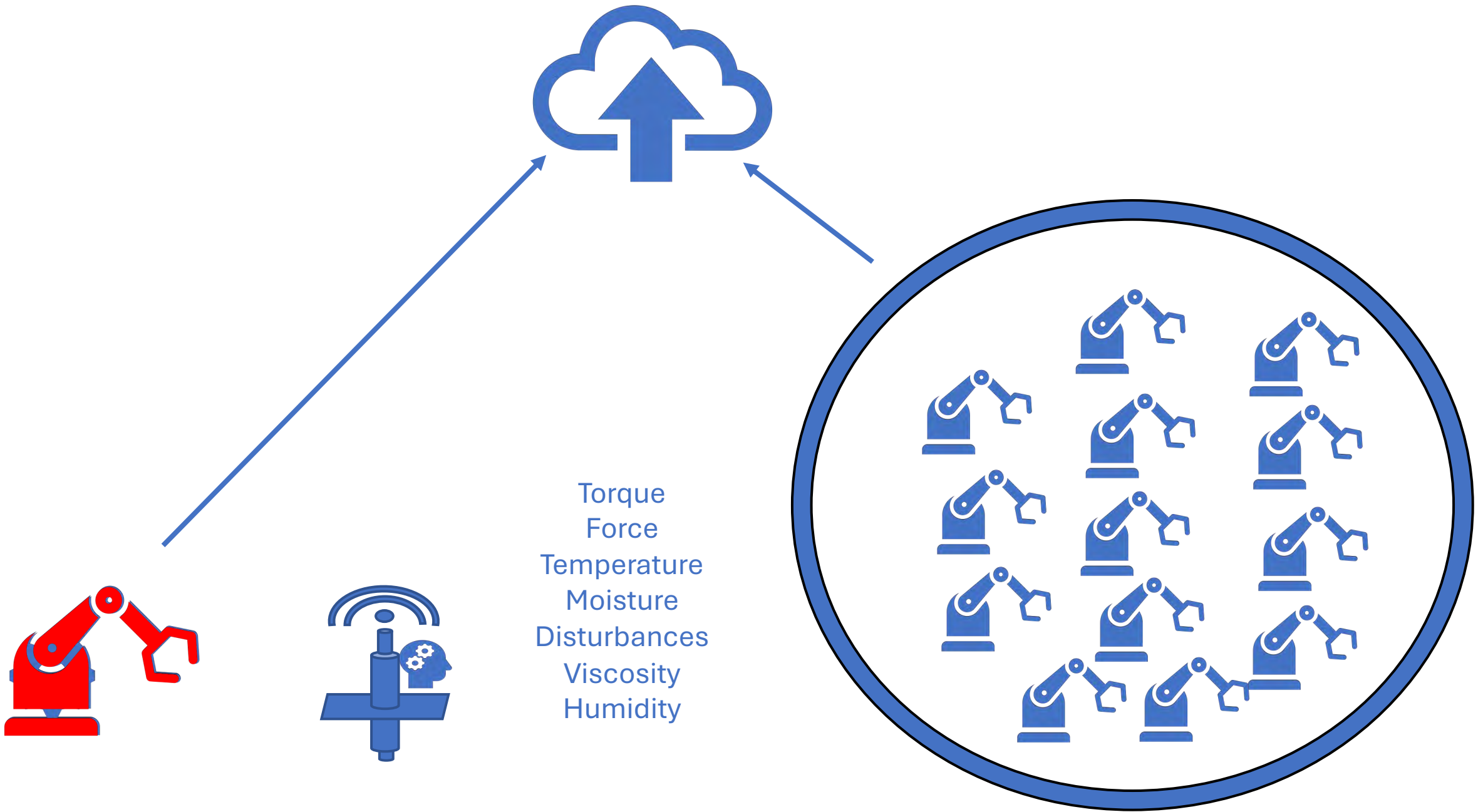


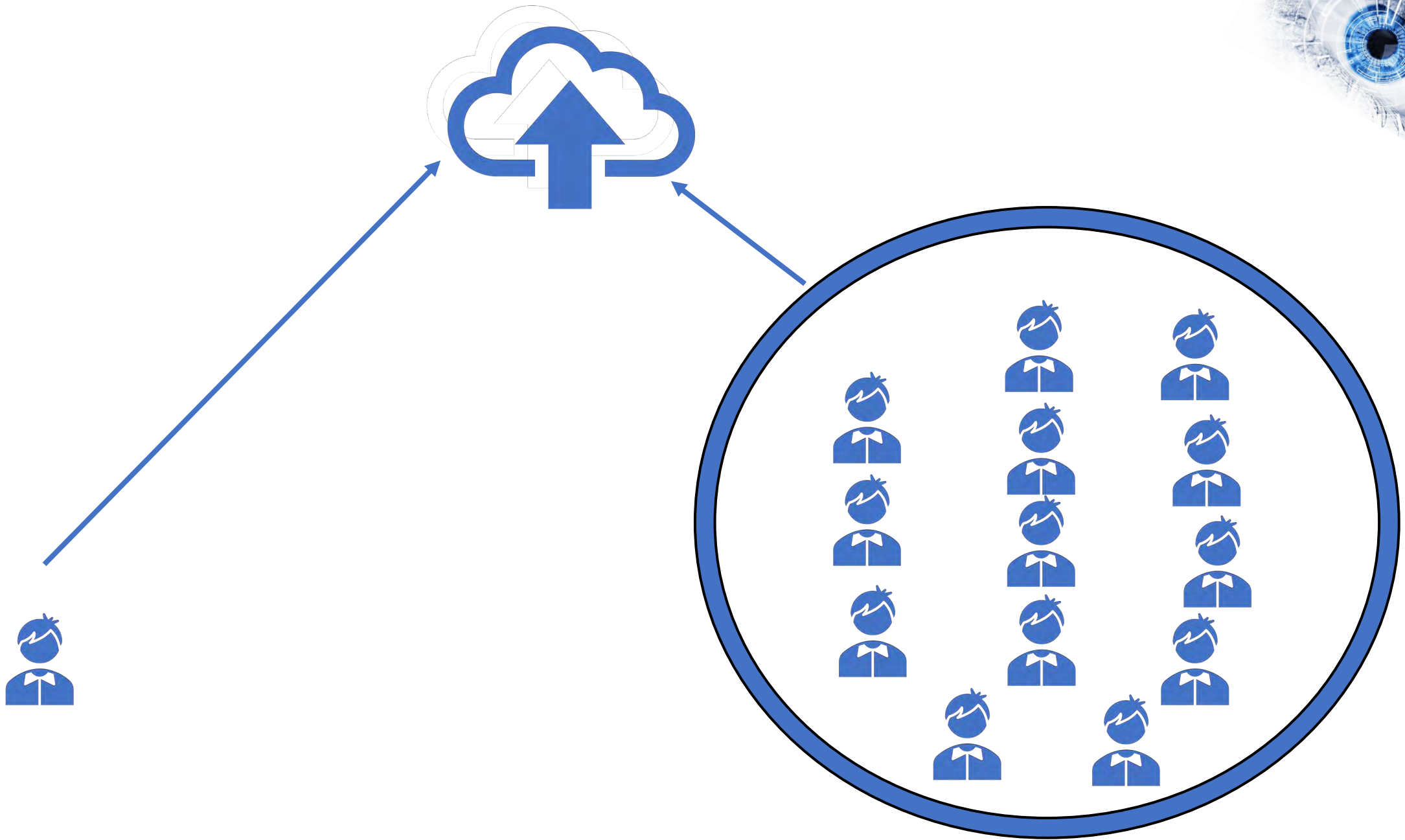


**We believe practices that are effective in bringing success to organizations in other sectors can bring about that same success in higher education.**









## Analyze Data Sets

Academic Performance  
Ambitions  
Attendance Records  
Behavioral Tendencies  
Changes in Grades  
Class Participation  
Demographics  
Extracurricular Activities  
Family Issues  
Health Issues  
Interests  
Motivations  
Personal Issues  
Personal Preferences  
Socioeconomic status  
Study Habits  
Test Scores  
Use of Educational Resources

## To Predict

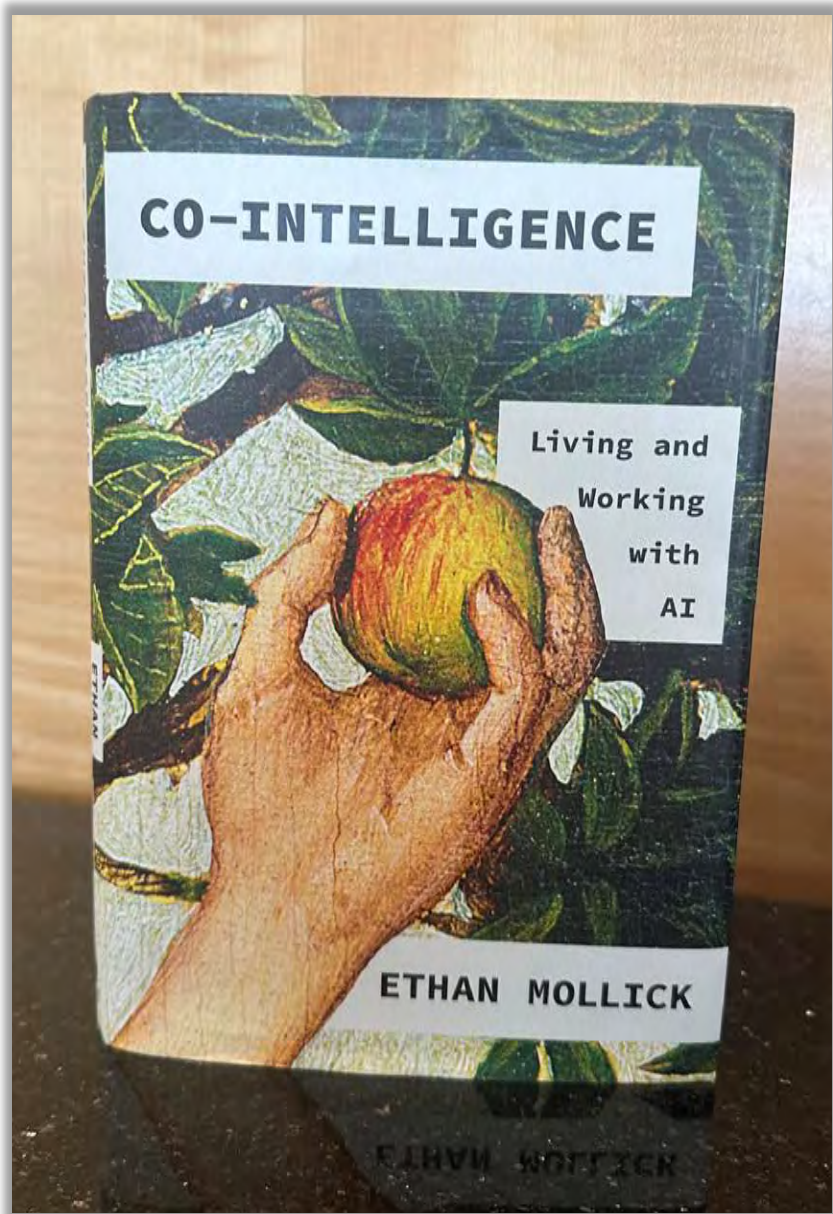
Academic Paths  
Academic Performance  
At-Risk Students  
Career Prospects  
Dropout Rate  
Learning Difficulties  
Level of Understanding  
Likelihood of Failure  
Pursuit of Further Education  
Risk of Underperforming  
Unique Strengths  
Unique Weaknesses

## To Adjust

Career Counseling  
Career Paths  
Course Load  
Course Selection  
Coursework  
Curriculum  
Feedback  
Funding  
Future Academics  
Intervention Programs  
Learning Aids  
Learning Plans  
Policy  
Resource Allocation  
Strategy  
Tutoring

# WHAT DOES THIS MEAN FOR EDUCATION?

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**“The lecture is in danger. Too many involve passive learning where students simply listen and take notes without engaging in active problem solving.”**

**BY SOME ESTIMATES IN MANY CLASSROOMS  
80%-90% OF TALK IS THE TEACHER SPEAKING /  
LECTURING TO STUDENTS**

**(& WE THINK THE PROBLEM IS THAT STUDENTS MIGHT USE  
CHATGPT TO HELP WRITE A PAPER?)**



A bat and a ball together cost \$1.10. The bat costs \$1.00 more than the ball. How much does the ball cost?

Ball	\$0.10
Bat	<u>\$1.10</u>
Total	<u>\$1.20</u>

Ball	\$0.05
Bat	<u>\$1.05</u>
Total	<u>\$1.10</u>



**LESS  
MEMORIZATION**

**MYRIAD  
ASSESSMENT  
METHODS**

**COMPETENCY  
PORTFOLIOS**

**APPLIED  
LEARNING**

**HANDS-ON  
ASSESSMENT**

**CRITICAL  
THINKING**

**PROBLEM  
SOLVING**

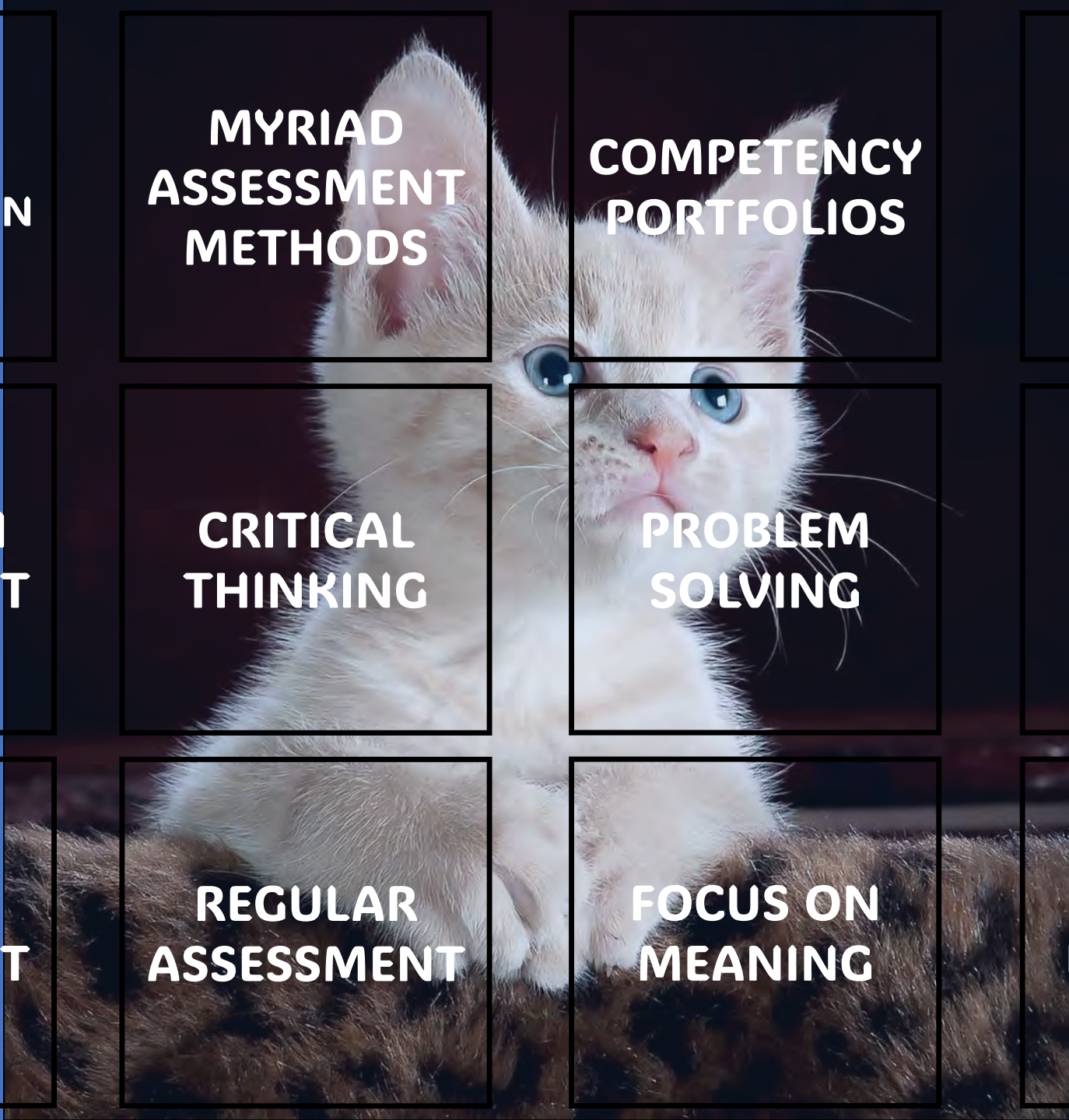
**GROUP  
PROJECTS**

**PROJECT  
ASSESSMENT**

**REGULAR  
ASSESSMENT**

**FOCUS ON  
MEANING**

**EMOTIONAL  
INTELLIGENCE**





# WHAT DOES THIS MEAN FOR EDUCATION?

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# INDUSTRY 4.0, AI AND THE FUTURE OF K-12 TECHNICAL EDUCATION



**Mike Beighley**  
Superintendent  
Whitehall School District

Now streaming on



Episode 166  
**The Tech Ed**  
Podcast



**INDUSTRY 4.0, AI AND THE  
FUTURE OF K-12  
TECHNICAL EDUCATION**

**Mike Beighley**  
Superintendent  
Whitehall School District

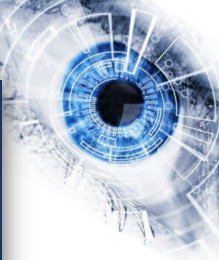
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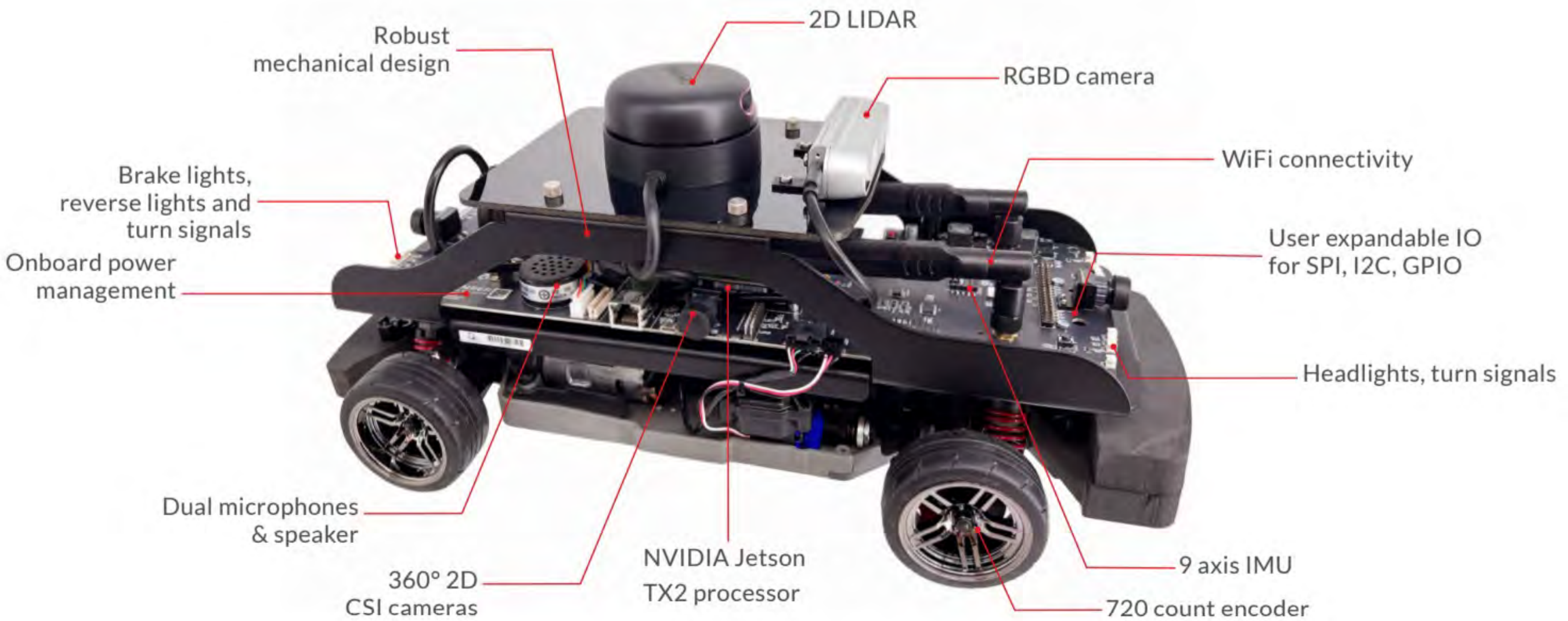


Episode 166  
**The Tech Ed**  
Podcast

**“Schools absolutely have to change quickly...our current system was built for a different time and we got results. But those results don’t match anymore what the world requires.”**









- Obstacle Detection
- Collision Avoidance
- Vehicle to Vehicle Communication
- Route Optimization
- Color Thresholding
- Digital Twin Simulation
- Human Machine Interfaces
- Classification
- Reinforcement Learning
- Supervised & Unsupervised Learning
- Intelligent Systems Thinking
- Python-based Programming
- Smart Sensors & devices
- Input/Output Applications
- Lidar-based mapping
- Vision Camera Systems
- Image Processing



# THE POWER OF COMMUNITY

to Drive Innovation in Small-Town  
America

**Greg Tehven**  
Co-Founder & CEO  
Emerging Prairie

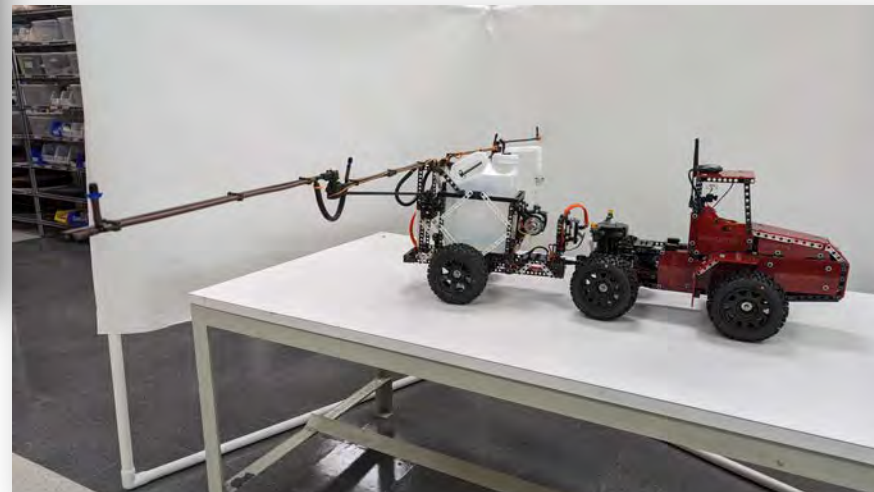
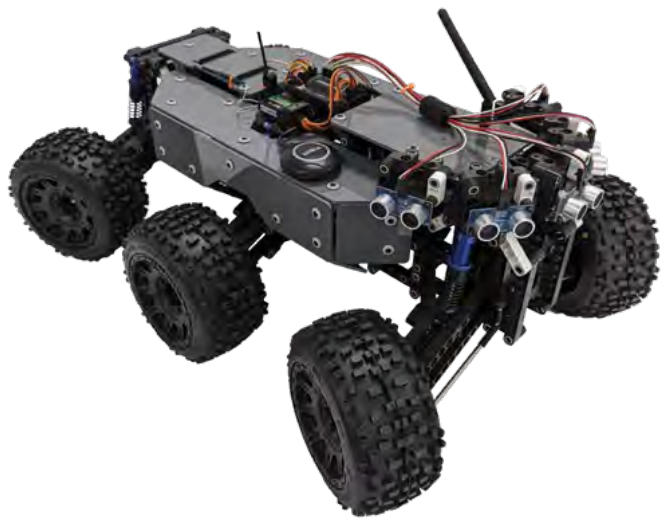
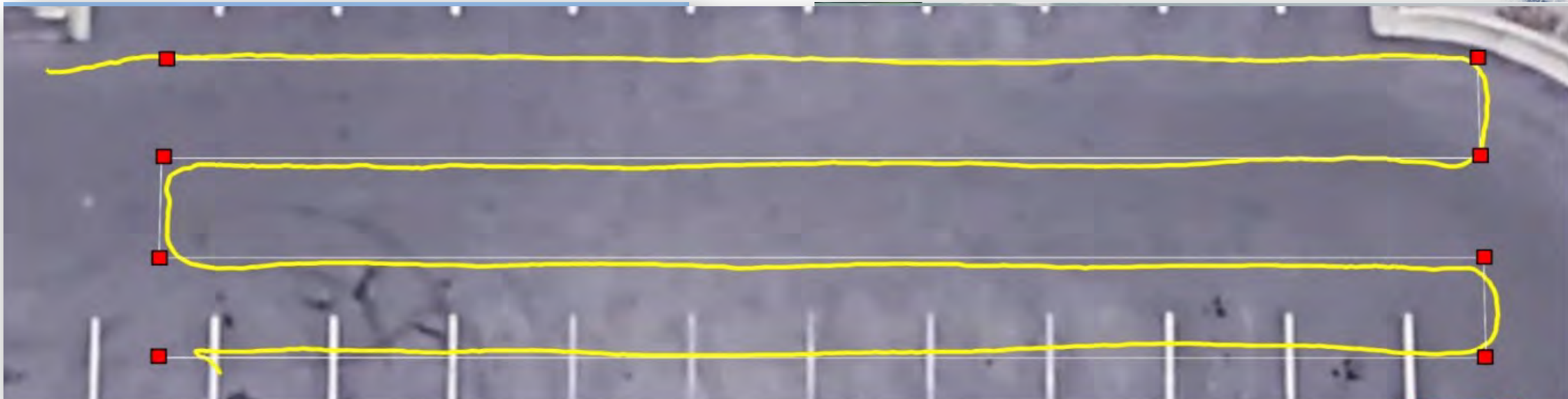
Episode 175  
**The Tech Ed**<sup>®</sup>  
Podcast

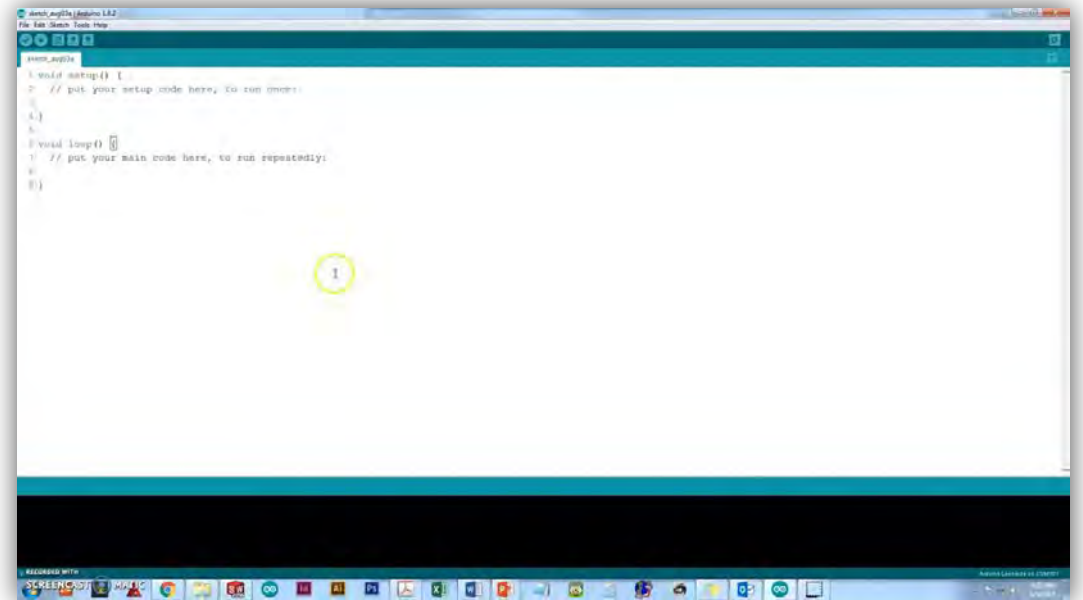
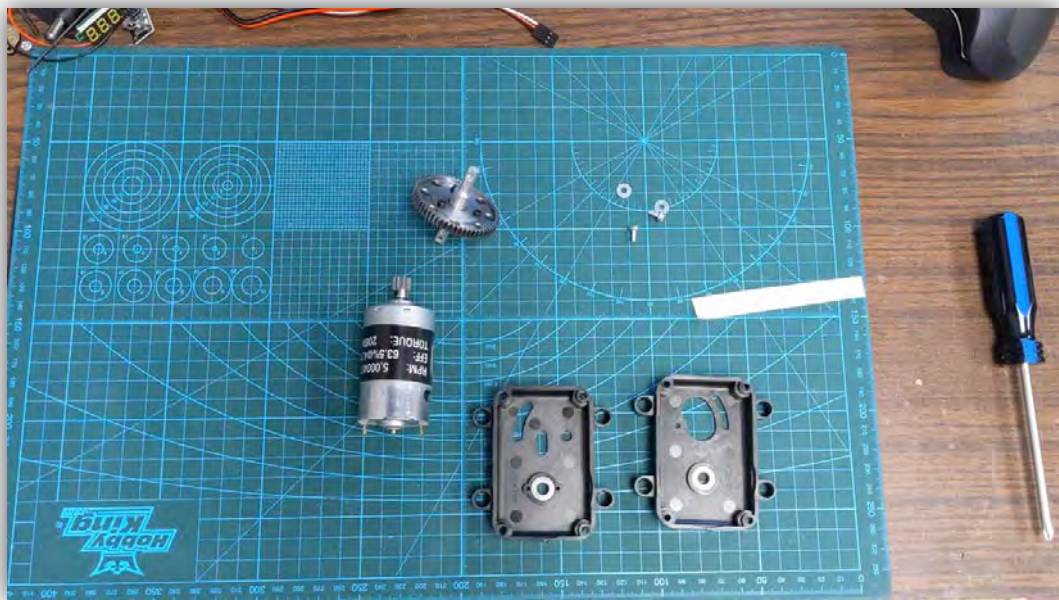
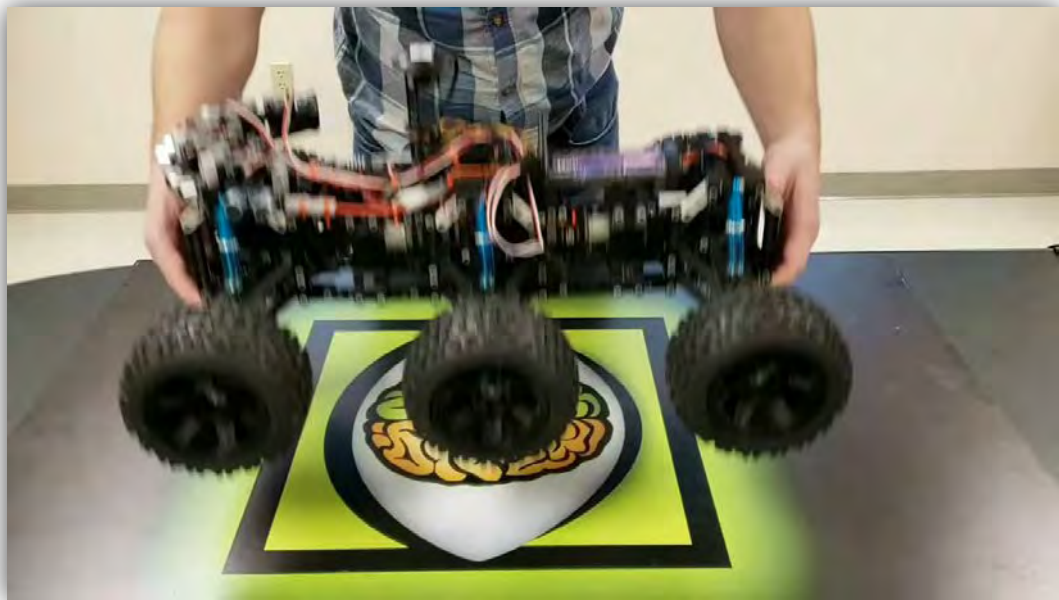
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The image is a podcast cover for 'The Tech Ed' featuring Greg Tehven. It has a dark background with a hexagonal pattern. A large portrait of Greg Tehven is on the left. The title 'THE POWER OF COMMUNITY' is at the top in large white letters. Below it, 'to Drive Innovation in Small-Town America' is in blue. Greg's name and title are in white and blue. At the bottom right, it says 'Episode 175 The Tech Ed Podcast' and 'Now streaming on' with icons for Spotify, Apple Podcasts, and YouTube. A decorative blue circular graphic is in the top right corner.











# Career Pathways Built on Industry-Education Collaboration

**Dr. Casey Sacks**

**President**

**BridgeValley Community & Technical College**

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Episode 161

**The Tech Ed<sup>®</sup>**  
Podcast

# 20+ Fortune 500 Chairpeople / CEOs



**DEVELOPING AN AI STRATEGY**  
Best practices for business leaders



**Todd Wanek**  
CEO - Ashley Furniture Industries

Episode 152  
Now streaming on  The Tech Ed Podcast

**Why Schools Should Teach Industrial Robotics and Automation**



Featuring guest speaker  
**Mike Cicco**  
President & CEO  
FANUC America



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NEW EPISODE!

**THE FUTURE OF ENERGY, POWER & SMART HOMES**



**AARON JAGDFELD**  
CEO, GENERAC



LISTEN ON 

**Believing in Better**

featuring guest speaker  
**Laura Kohler**  
Senior Vice President - Human Resources,  
Stewardship and Sustainability, Kohler Co.



The Tech Ed Podcast  
Listen and subscribe 

**THE TITANIUM ECONOMY**

The companies you've never heard of that keep America running



**Asutosh Padhi**  
North America Managing Partner  
McKinsey & Company



Episode 115  
The Tech Ed Podcast

**Heroes of our Time: Restoring the Dignity of Work in America**

featuring guest speaker  
**Nick Pinchuk**  
Chairman and CEO of Snap-on



Listen and subscribe  The Tech Ed Podcast



# Governors / Senators / Congress



**EDUCATION REIMAGINED:**  
**What America can learn from the success of North Dakota**

**Doug Burgum**  
Governor of North Dakota & Candidate for President of the United States

Now available on The TechEd Podcast

Episode 136  
The Tech Ed Podcast



**THE EDUCATION GOVERNOR**

**TONY EVERS**  
GOVERNOR OF WISCONSIN

LISTEN ON:



**STRENGTHENING STEM IN AMERICA**  
*from precision ag to nuclear fusion*

**Congressman Frank Lucas**  
Chairman of the House Committee on Science, Space and Technology

Episode 119  
The Tech Ed Podcast



**Universities Should Be the Problem-Solvers**

with guest speaker  
**Tommy Thompson**  
President of the UW System  
-and-  
42nd Governor of Wisconsin  
19th US Secretary of Health & Human Services

Now streaming!

The Tech Ed Podcast



**CHIPS AND SCIENCE ACT:**  
**What it means for technology & education**

**Senator Todd Young**  
United States Senator for Indiana

Episode 86  
The Tech Ed Podcast



The Tech Ed Podcast

**Tech Ed: A Path to Entrepreneurship**



# Government / Public Policy



**SIXTY BY 30:**  
Reskilling Michigan's Workforce

**SUSAN CORBIN**  
DIRECTOR -  
Michigan's Department of Labor and Economic Opportunity (LEO)

The Tech Ed Podcast

**Skilled Career Opportunities for Veterans**

with guest speaker  
**John Lowry**  
Assistant Secretary,  
Veterans Training and  
Employment  
US Department of Labor

The Tech Ed Podcast

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**MOBILIZING MICHIGAN**  
Creating a High-Tech Workforce for the Future

**Kerry Ebersole Singh**  
Chief Talent Solutions & Engagement Officer -  
Michigan Economic Development Corporation

Episode 127  
The Tech Ed Podcast

New episode!

**Work and Learn:**  
Education & Innovation  
Under One Roof

with guest speaker  
**Emily DeRocco**  
US Department of Labor;  
The Manufacturing Institutes

Now streaming!

The Tech Ed Podcast

**GLOBAL ENERGY POLICY**

**Christopher Guith**  
Senior Vice President  
U.S. Chamber of Commerce's  
Global Energy Institute

Episode 108  
The Tech Ed Podcast

**STEM EDUCATION OPENS DOORS TO TOP TECH CAREERS AT THE DOD**

**Dr. David Honey**  
Deputy Undersecretary for  
Research and Development  
U.S. Department of Defense

Episode 123  
The Tech Ed Podcast





Matt Kirchner



OSD-PA





# Education Disruptors



**WHAT TECHNICAL COLLEGES SHOULD PRIORITIZE**  
in this new era of higher education

**Roger Stanford**  
President  
Western Technical College

Episode 130  
The Tech Ed Podcast



UW-Stout's Groundbreaking  
**AUTOMATION LEADERSHIP DEGREE**  
is a fast track to Industry 4.0

Chancellor Katherine Frank  
Dr. David Ding

Episode 130  
The Tech Ed Podcast



**AN AI PLAYBOOK**  
for the classroom & beyond

featuring  
**Jarrod Barnes**  
New York University

Episode 114  
The Tech Ed Podcast



**Building Systemic Equity in Urban Education**

featuring guest speaker  
**Dr. Joe Gothard**  
Superintendent of St. Paul Public Schools

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**Bridging the Education-Industry Gap**

featuring special guest  
**Dr. Bill Pink**  
President  
Grand Rapids Community College

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**How a Statewide College Fully Aligned to Workforce Needs**

Dr. Sue Ellspermann  
President  
Ivy Tech Community College

Chris Lowery  
VP Workforce and Careers  
Ivy Tech Community College

Ivy Tech Community College

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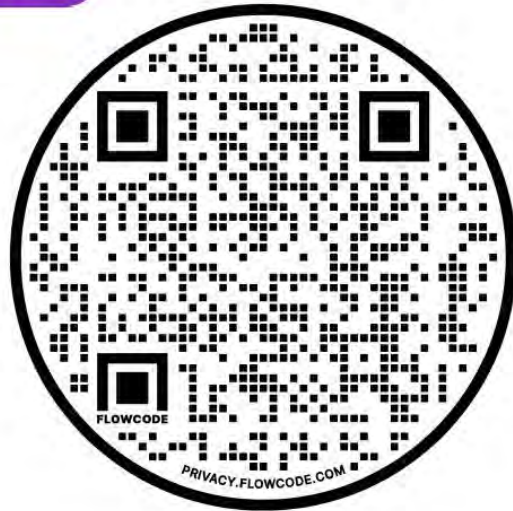


# The Tech Ed Podcast

# TOP 200



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# WHAT DOES THIS MEAN FOR EDUCATION?

1. **PERSONALIZED LEARNING**
2. **THE DEATH OF THE LECTURE**
3. **TEACHING APPLIED A.I.**
4. **THE CHANGING ROLE OF THE TEACHER**
5. **CHAT-GP-CHEATING**
6. **LEADING IN THE AGE OF AI**



**We believe practices that are effective in bringing success to organizations in other sectors can bring about that same success in higher education.**









**SAFER**

**MORE INTERESTING**

**BETTER PAYING**



**WORK HAS MOVED FROM DIRECT LABOR  
TO FACILITATION AND ACCOUNTABILITY FOR OUTCOMES**





**WORK WILL MOVE FROM DIRECT INSTRUCTION  
TO FACILITATION AND ACCOUNTABILITY FOR OUTCOMES**



# THE EDUCATION GOVERNOR



**TONY EVERS**

**GOVERNOR OF WISCONSIN**

LISTEN ON:



# Gov. Evers Announces Governor's Task Force on Workforce and Artificial Intelligence Releases Final Action Plan

July 31, 2024

Share This Story:



The background of the slide is a photograph of a sunset over a large body of water. The sky transitions from a deep purple at the top to a bright orange and red near the horizon, where the sun is setting. The water in the foreground is dark blue with gentle ripples. The title text is centered in the upper half of the image.

# IMPLEMENTING AI INTO CURRICULUM DEVELOPMENT

Source: WISBUSINESS  
7/24/24

# ELECTRO-MECHANICAL TECHNOLOGY

Introduction to Advanced Manufacturing

AC/DC Electricity

Pneumatics

Hydraulics

Industrial Controls

Sensors

Relay Control

AC Drives

PLC Programming

CNC Programming

Introduction to Robotics

Measurement & Gauging

Mechanical Drives

Troubleshooting

Electric Motor Control

Lean Manufacturing

An electromechanical technology degree program typically combines elements of electrical and mechanical engineering to prepare students for careers in fields where both electrical and mechanical systems are integrated. The specific courses you should include in such a degree program can vary depending on the institution and program, but here are some common core courses and topics that are often covered:

## 1. Mathematics:

1. Calculus
2. Differential Equations
3. Linear Algebra
4. Probability and Statistics

## 2. Physics:

1. General Physics
2. Electromagnetism
3. Thermodynamics

## 3. Electrical Engineering

1. Circuit Analysis
2. Electronics
3. Digital Logic Design
4. Control Systems
5. Power Electronics
6. Electric Machines and Drives

## 4. Mechanical Engineering:

1. Statics and Dynamics
2. Strength of Materials
3. Fluid Mechanics
4. Thermodynamics and Heat Transfer
5. Mechanical Design
6. Manufacturing Processes

## 5. Instrumentation and Control:

1. Sensors and Transducers
2. Industrial Control Systems
3. Automation and Robotics
4. PLC Programming
5. Process Control

## 6. Computer Science and Programming:

1. Programming (e.g., C++, Python)
2. Microcontroller and Microprocessor Programming
3. Data Acquisition and Analysis

## 7. Electromechanical Systems:

1. Integration of Electrical and Mechanical Systems
2. Mechatronics
3. Electromechanical Systems Design
4. Robotics and Automation

## 8. Safety and Ethics:

1. Engineering Ethics
2. Safety in Engineering and Technology

## 9. Technical Writing and Communication:

1. Report Writing
2. Technical Documentation

## 10. Elective Courses:

1. Depending on your specific interests and career goals, you may have the opportunity to choose elective courses in areas like renewable energy systems, control system design, or specific applications like automotive technology.

## 11. Labs and Projects:

1. Laboratory work and hands-on projects are essential to gaining practical skills in electromechanical technology. These can include building circuits, programming microcontrollers, working with sensors and actuators, and designing and testing mechanical systems.

Remember that program requirements can vary between institutions, so it's essential to review the specific curriculum and course catalog of the university or college where you plan to pursue your degree. Additionally, consider speaking with academic advisors or faculty members to tailor your degree program to your career goals and interests.



# write a lesson plan for sensors and transducers

ChatGPT

Certainly! Below is a lesson plan for a class on "Sensors and Transducers." This lesson plan is intended for a single class session and can be adapted for different educational levels, from high school to college. You can expand or modify it as needed for your specific audience and duration.

**Title:** Understanding Sensors and Transducers

**Objective:** By the end of this lesson, students will be able to define sensors and transducers, identify different types of sensors, and understand their applications in various fields.

**Duration:** 60-90 minutes

**Materials:**

- Whiteboard and markers
- Projector or whiteboard for visual aids (optional)
- Handouts with examples of sensors and transducers
- Examples of sensors and transducers (if available)
- Interactive demonstrations (if possible)





## Lesson Plan:

### Introduction (10 minutes):

- Begin by engaging students with a real-world scenario that involves sensors, such as a thermostat, smartphone accelerometer, or a car parking sensor. Ask students how they think these devices work.
- Define the key terms: sensor and transducer. Explain that sensors are devices that detect a physical quantity (e.g., temperature, pressure) and convert it into a measurable signal, while transducers convert one form of energy into another.

### Types of Sensors (20 minutes):

- Present an overview of various types of sensors and their applications, including but not limited to:
  - Temperature sensors (thermocouples, thermistors, RTDs)
  - Pressure sensors (piezoelectric, capacitive, strain gauge)
  - Proximity sensors (inductive, capacitive, ultrasonic)
  - Light sensors (photodiodes, phototransistors, light-dependent resistors)
  - Motion sensors (infrared motion detectors, accelerometers)
- Provide real-world examples for each type of sensor.

## **University of Wisconsin System President Jay Rothman**

- **Prepare students for jobs and roles that don't yet exist**
- **Automated processes or chatbots acting as virtual advisors**
- **System to notify and prompt students to seek additional help**
- **Not far off from the day that tutoring will be available through AI**

**Source: WISBUSINESS  
7/24/24**



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EDUCATION

# Paper exams, AI-proof assignments: Wisconsin college professors adjust in a world with ChatGPT



**Kelly Meyerhofer**

Milwaukee Journal Sentinel

Published 5:02 a.m. CT Feb. 26, 2024 | Updated 11:19 a.m. CT Feb. 26, 2024



Eric Ely

World we're living in  
Disservice to limit / prohibit



Sam Harshner  
AI ban on syllabi  
Students sign contract





**STUDENTS WILL USE AI TO PROMPT THEIR WORK PRODUCT**

**STUDENTS WILL USE AI TO DO THEIR RESEARCH**

**STUDENTS WILL USE AI TO HELP PREPARE CONTENT**



6:46

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Reply to pythianpriestess's comment

Oh thank you so much! I want to learn to get the AI to write in my style or voice. 🙏

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## Using ChatGPT is the same as seeking help from classmate

David Joyner, Georgia Institute of Technology

## Columbia native asks ChatGPT to revise his English (with academic advisor permission)

Andres Zambrano, UPenn PHD Student

## Students ask ChatGPT to write a two-page essay & correct mistake

James Hendler Rensselaer Polytechnic

## Chat GPT asked to solve a business problem and students evaluate the answer

Mark Leary, Washington U

“Good is no longer good enough. It has to be awesome.”

Christian Terwiesch – Wharton School – UPenn



Source: [Is It OK for Students to Use ChatGPT? More Teachers Say Yes, Hegerty, WSJ 11.23.23](#)



# Sen. Bradley: Announces AI Study Committee membership



📅 July 9, 2024

[Home](#) » [Press Releases](#) » [Sen. Bradley: Announces AI Study Committee membership](#)

**Madison** – As public curiosity about artificial intelligence (AI) mounts, Senator Julian Bradley has announced the membership of the committee he chairs that’s set to analyze the opportunities and challenges presented by its development.

“I look forward to working with this team of experts to examine how Wisconsin can be a leader in AI while avoiding potential pitfalls,” said Bradley. “This committee will travel throughout the state to consider how the new technology will impact workforce, healthcare, law enforcement, government, and consumer protection.”

The committee’s twelve members include four legislators and eight professionals from a variety of industries. The members are:

- Senator Julian Bradley (Chair)
- Representative David Armstrong (Vice-Chair)
- Senator Tim Carpenter
- Representative Clinton Anderson
- Sarah Alt – Chief Process and AI Officer for Michael Best & Friedrich
- Rich Barnhouse – President of Waukesha County Technical College
- Timothy Dickson – Chief Digital and Information Officer for Regal Rexnord Corp.
- Kathy Henrich – CEO of MKE Tech Hub Coalition
- Jay Hill – Vice President of Advanced Technologies for GE HealthCare
- Matt Kirchner – President of LAB Midwest
- Christopher Mende – Head of Customer Engineering at Google Public Sector
- Eric Toney – District Attorney for Fond du Lac County

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**Anna**

@itsafronomics

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I JUST WANT PRECEDENTED TIMES FOR ONCE. I'm so tired. 😞

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**bijan**

@bijanstephen

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# LEADING IN THE AGE OF AI

□ RESOLUTION

□ DISCIPLINE

□ A RELENTLESS FOCUS ON PROGRESS

□ NUANCE



# RESOLUTION

**“Stubborn isn’t a word I  
would use to describe  
myself;  
pigheaded is  
more like it.”**

**Michael Bloomberg**



# DISCIPLINE

**“Having the capacity to  
achieve a goal starts with  
building strong teams  
based on  
merit  
and  
competence,  
not politics or friendships.**



Unveiling of the Bloomberg Center for Cities at Harvard University

# DISCIPLINE

It means giving people the  
freedom to innovate -  
and  
holding them accountable  
for success.



# DISCIPLINE

It means  
getting sophisticated about data.



# DISCIPLINE

It means conducting rigorous evaluations of programs – and pulling the plug on ones that aren't working."

Michael Bloomberg

Unveiling of the Bloomberg Center for  
Cities at Harvard University





# A RELENTLESS FOCUS ON PROGRESS



**We will go  
forward, we will  
never go back.”**

**Michael Bloomberg**



# NUANCE



## Douglas Dynamics Announces CEO Transition

Douglas Dynamics, Inc.

Thu, May 16, 2024 • 6 min read



In This Article:

PLOW +2.54%



Douglas Dynamics, Inc.

*President & CEO Bob McCormick Retiring from the Company in July; Current Chairman Jim Janik will Assume Interim President & CEO role*

MILWAUKEE, May 16, 2024 (GLOBE NEWSWIRE) -- Douglas Dynamics, Inc. (NYSE: PLOW), North America's premier manufacturer and upfitter of work truck attachments and equipment, today announced the start of a CEO transition process.

# PUSH

# PULL

# HUG

# WISDOM









# Where Machine Learning Meets Academic Learning

Matt Kirchner

