

**MIT INSTITUTE FOR DATA,  
SYSTEMS, AND SOCIETY**



**IDSS**

***Data Science and Artificial Intelligence***

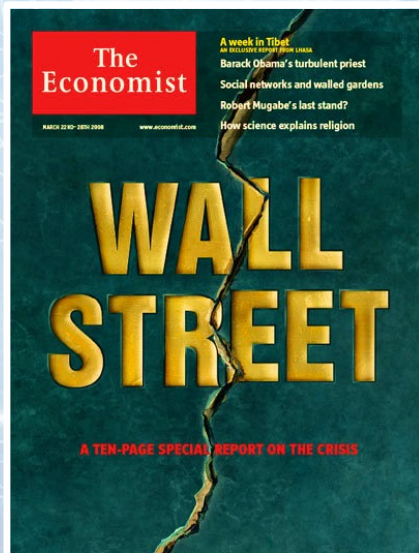
The image features a light blue background with a network of white lines and dots, resembling a globe or a data network. A semi-transparent globe is centered, with the word "Mission" written in a dark red font across its middle. Two large, light blue curly braces are positioned on either side of the word, extending from the top to the bottom of the globe's width.

**Mission**



“Address **complex societal challenges** by advancing education and research at the intersection of **statistics, data science, information and decision systems, and social sciences.**”

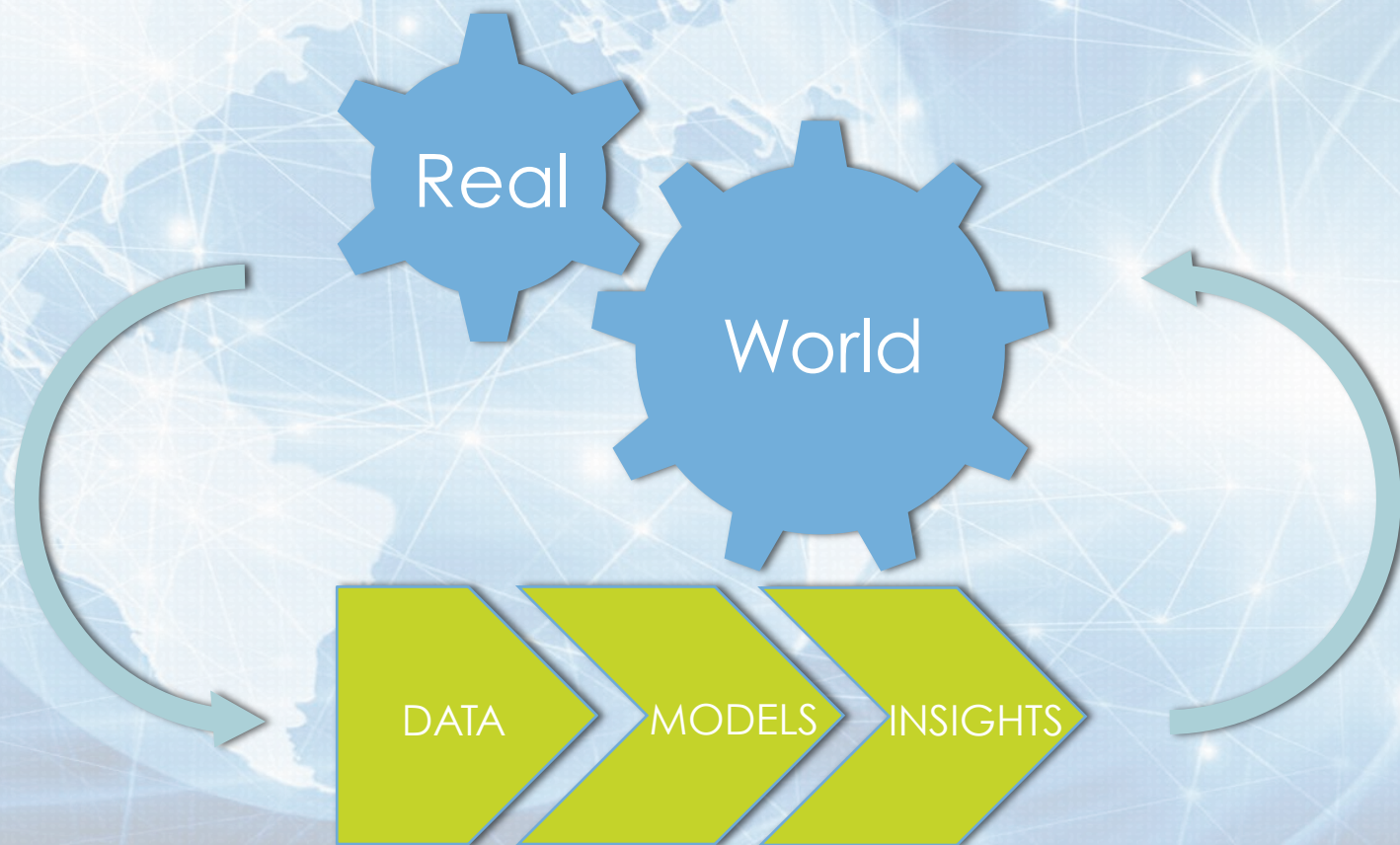
IDSS mission statement





“Address **complex societal challenges** by advancing education and research at the intersection of **statistics, data science, information and decision systems, and social sciences.**”

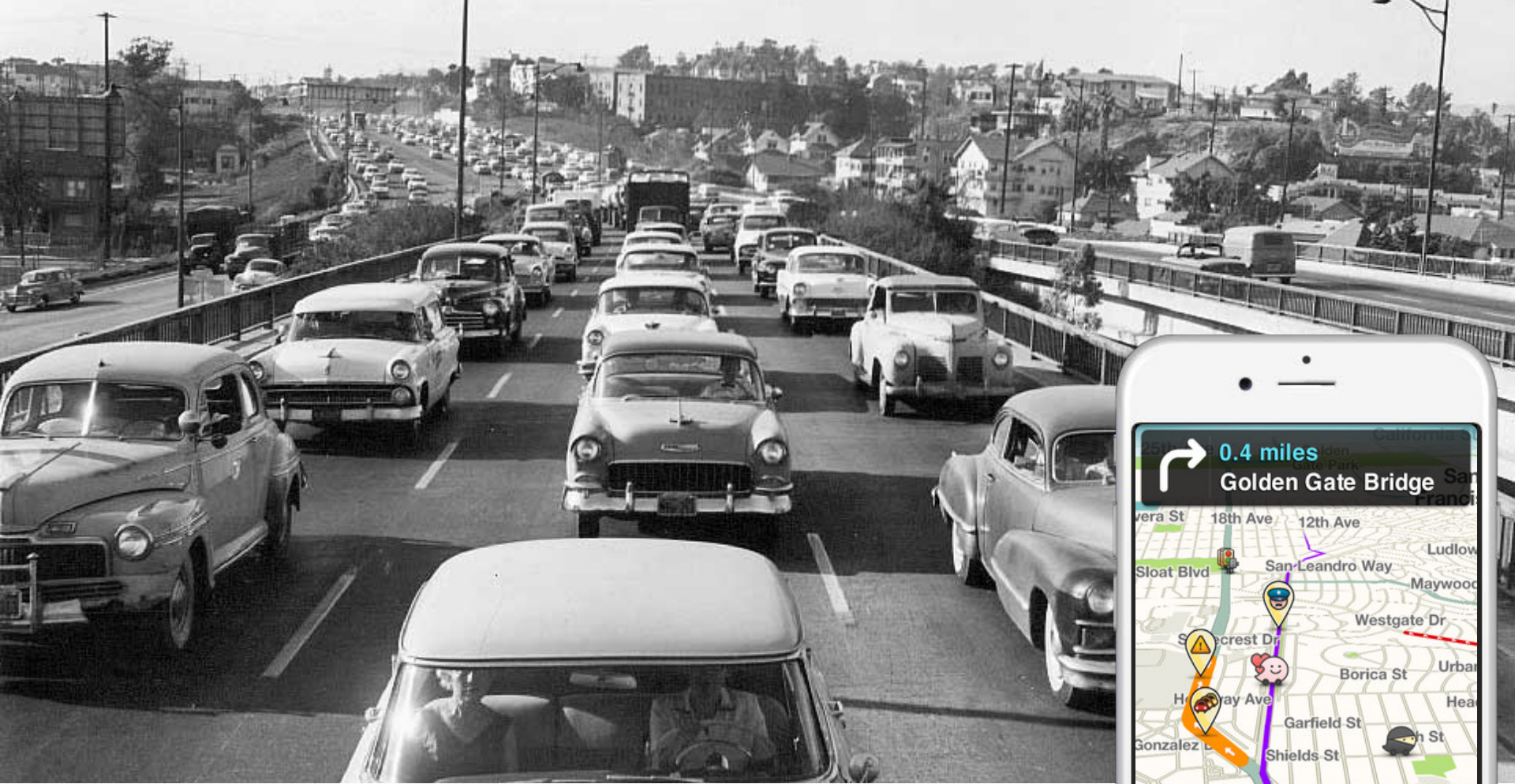
IDSS mission statement



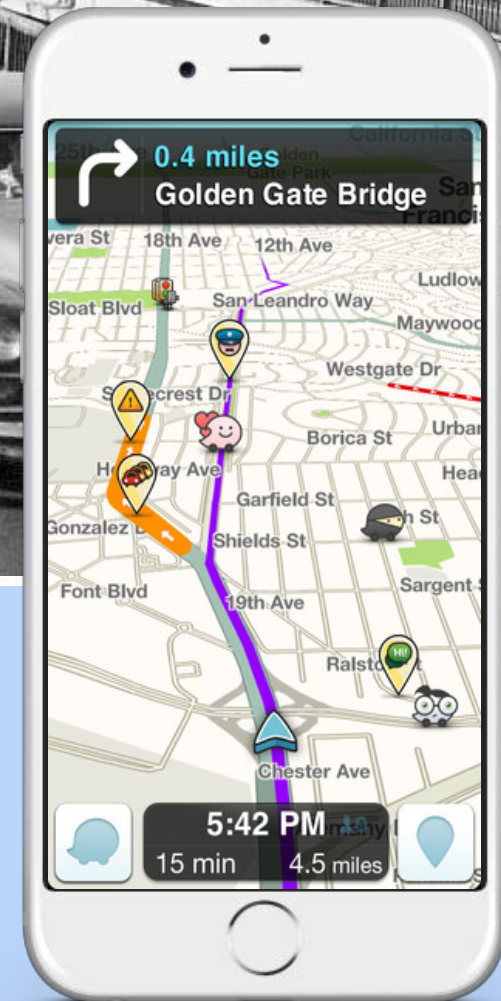




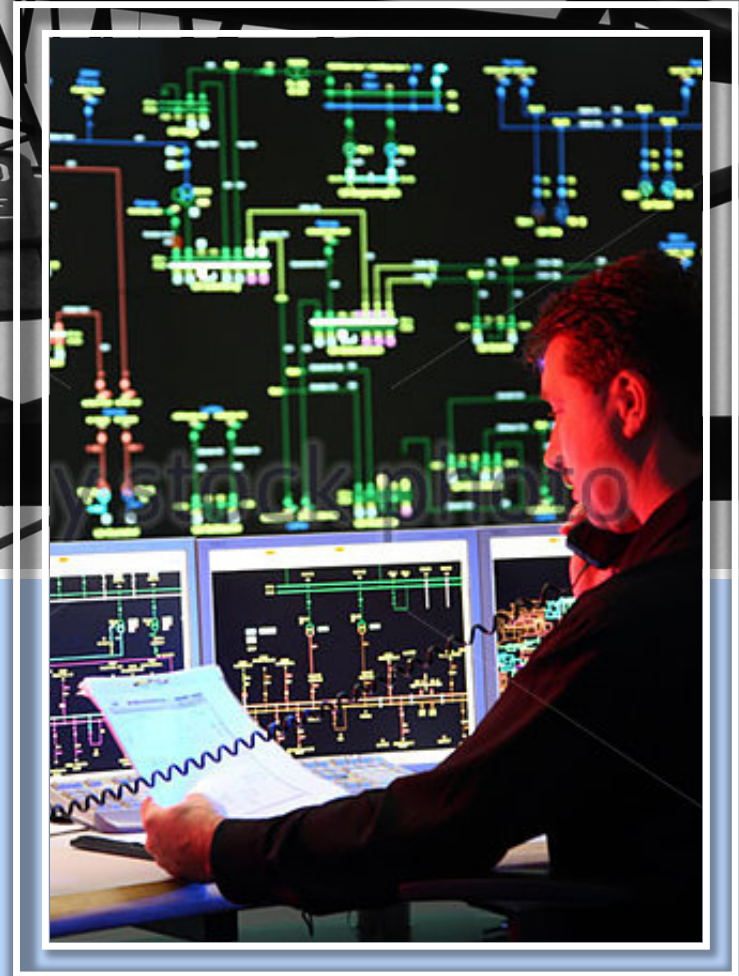
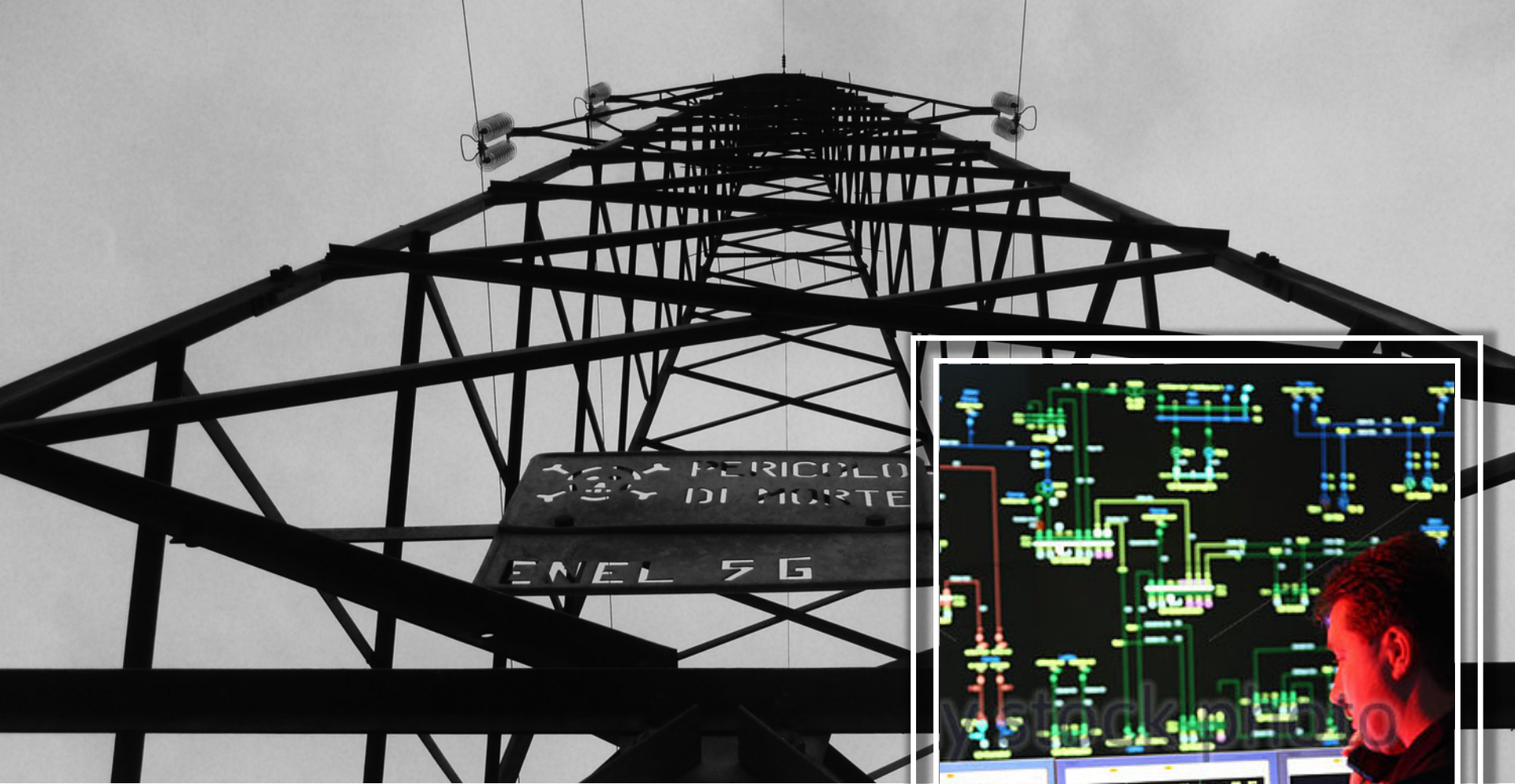
# Intelligent Infrastructures



# Congestion Going From Bad to Worse







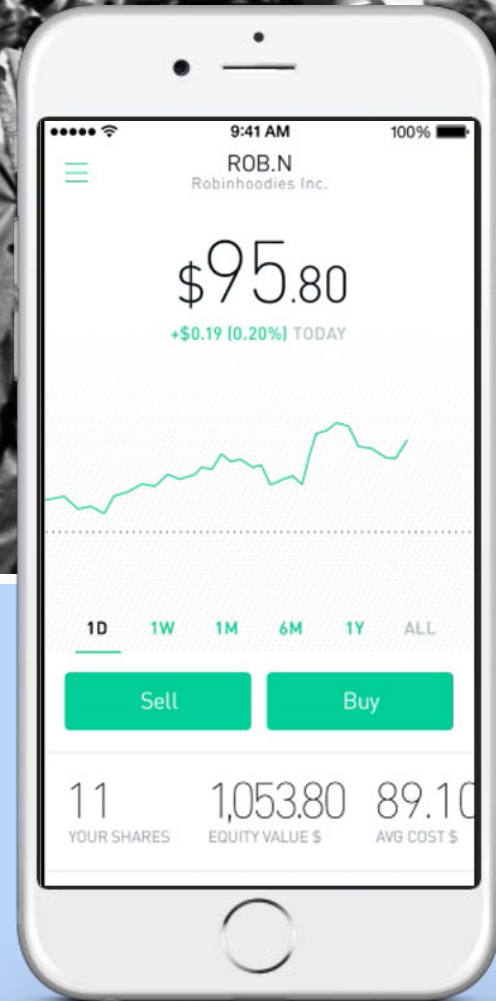
**What if the Lights Go Out?**



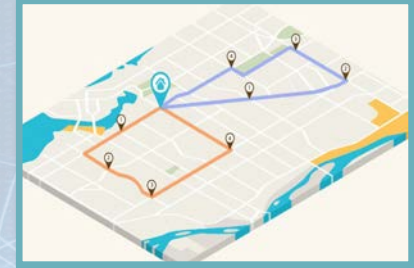
## Mobility of the Future

Autonomous vehicles will transform transportation and our behavior. Technologically, we need to understand how to create distributed intelligent control interacting with data-driven incentive mechanisms to create a safe and secure architecture.





## Too Big To Fail



Physical and Engineered  
Systems

Society

Institutions

DATA

DATA

MODELS

INSIGHTS



THEORY



A light blue globe is centered in the background, overlaid with a complex network of white lines and dots, representing a global communication or data network. The text is centered over the globe.

# Misinformation and Bubbles



# VOTERS! DON'T LET YOUR WAR PRESIDENT VOTE DEMOCRATIC



## Pull One Lever For Candidates Supporting This

### *The Preamble*

"We, the representatives of the Democratic party, in the

enemy; we also commend the brave and devoted women who, as nurses, and aides in the auxiliary services, are risking their lives and health in the nation's behalf.

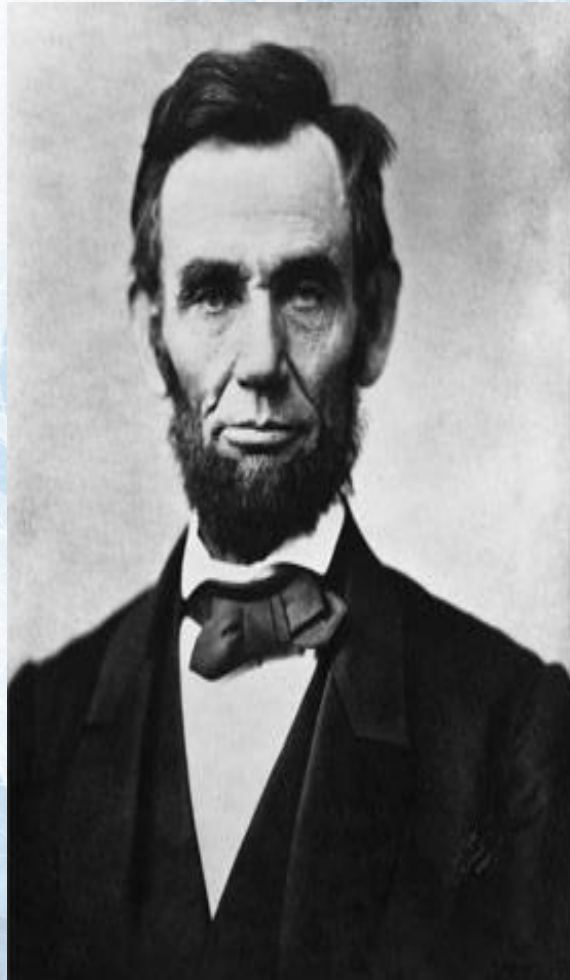
7 We advocate reforestation and conservation of our natural resources to be developed by the people and for the people.



# Social Media is Transforming Voting



# Misinformation



**“Don’t believe  
everything you  
read on the  
Internet just  
because there’s  
a picture with a  
quote next to it.”**

**—Abraham Lincoln**

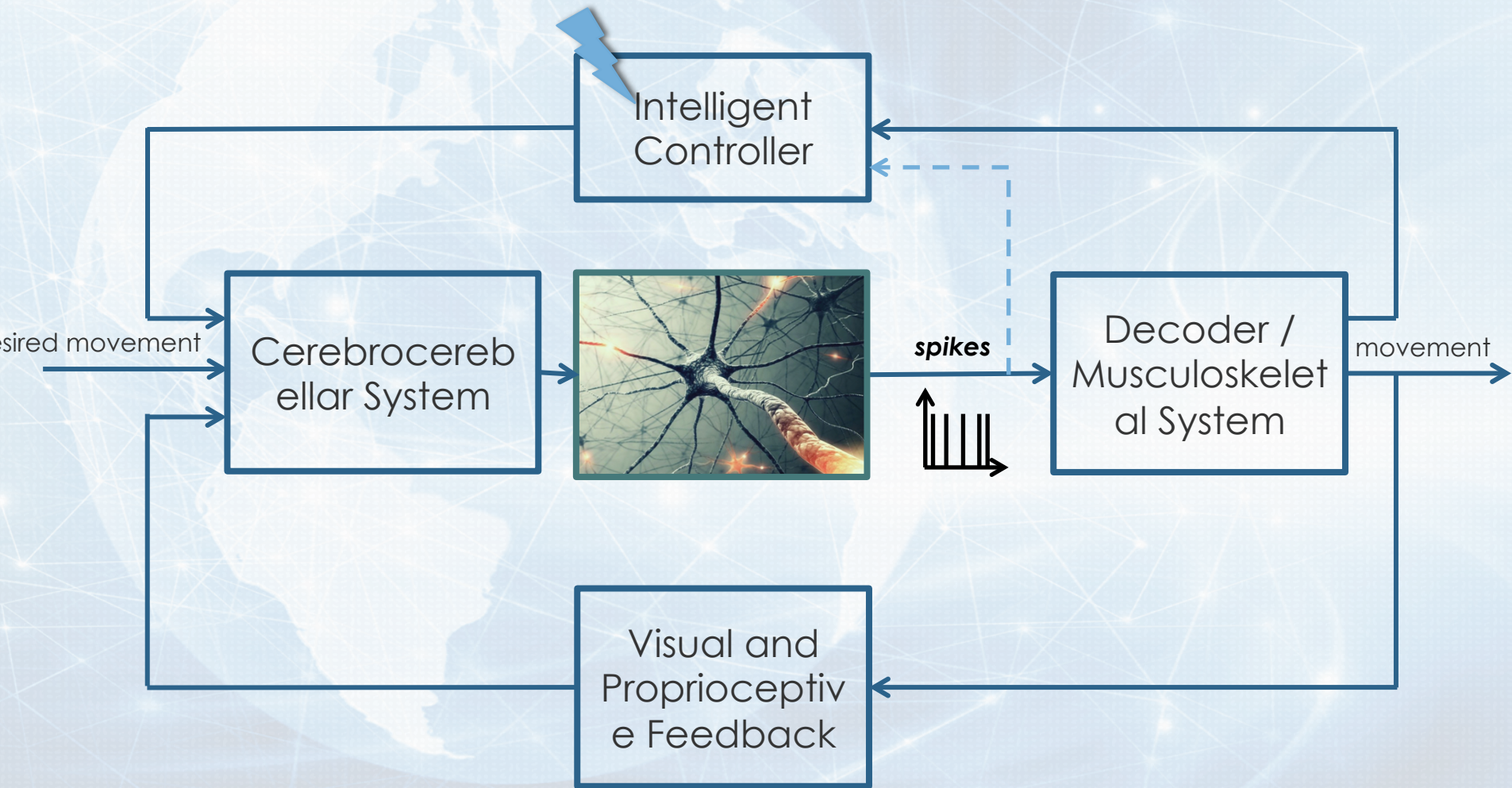




Neuroscience and  
AI



# Intelligent Control Meets Neuroscience







Market Place for  
Data



# A Data Marketplace: Why design it now?

Data has become a currency

“Personal data is the new oil of the internet  
& the new currency of the digital world.”

MEGLENA KUNEVA, European Consumer Commissioner

Gross market inefficiencies currently present

**Bloomberg**



23andMe



REUTERS

nielsen  
.....

# A Data Marketplace: Why design it now?

Urgent need to rigorously model data as an asset



*How does the government design policy and litigate when a massive data breach occurs?*





The image features a light blue background with a network of white lines and dots, resembling a globe or a data network. A semi-transparent globe is centered in the background. Overlaid on the globe is the text "The Bridge" in a dark red, serif font. The text is flanked by two large, blue, curly braces that extend outwards, suggesting a connection or a bridge between two points.

# The Bridge



# Mission of the Bridge

## ***Enable, Expedite, Experiment***

Create a facility to store, process and distribute data in a secure manner that can operate at scale. The facility will provide a variety of data processing services that can seamlessly operate on top of the stored data.



# Architecture



Data Sets  
(Secure Storage, curate  
Distribution, ...)

Services  
(Scientific Reproducibility,  
Machine Learning,  
Teaching, ...)

Software  
(Open Sources, Test,  
Experimental, ...)



Economic, Shared  
(Cloud) Infrastructure

**DATA LAB**



Cloud Service Providers  
(Internal and External)

# What will it empower?

## Activities

- Host a variety of data sets; **MIT data**
- Ease of management, curation, and distribution of data
- Data driven end-to-end challenges (Kaggle style)
- “Reproducible” Science; broker for social data
- Education through teaching aid
- **Data Makerspace**
- (Most importantly) those not yet imagined,...

## Associated research programs

- Data storage, security and interfaces
- Visualization
- Statistics / Machine Learning / Decision Making algorithms
- Educational Innovation
- (Most importantly) those not yet imagined,...



A light blue background featuring a semi-transparent globe of the Earth. Overlaid on the globe is a complex network of thin white lines connecting various points, resembling a global communication or data network. The text "Thank You" is centered in a dark red, serif font. Two large, light blue curly braces are positioned on either side of the text, framing it. The overall aesthetic is clean, modern, and technological.

Thank You