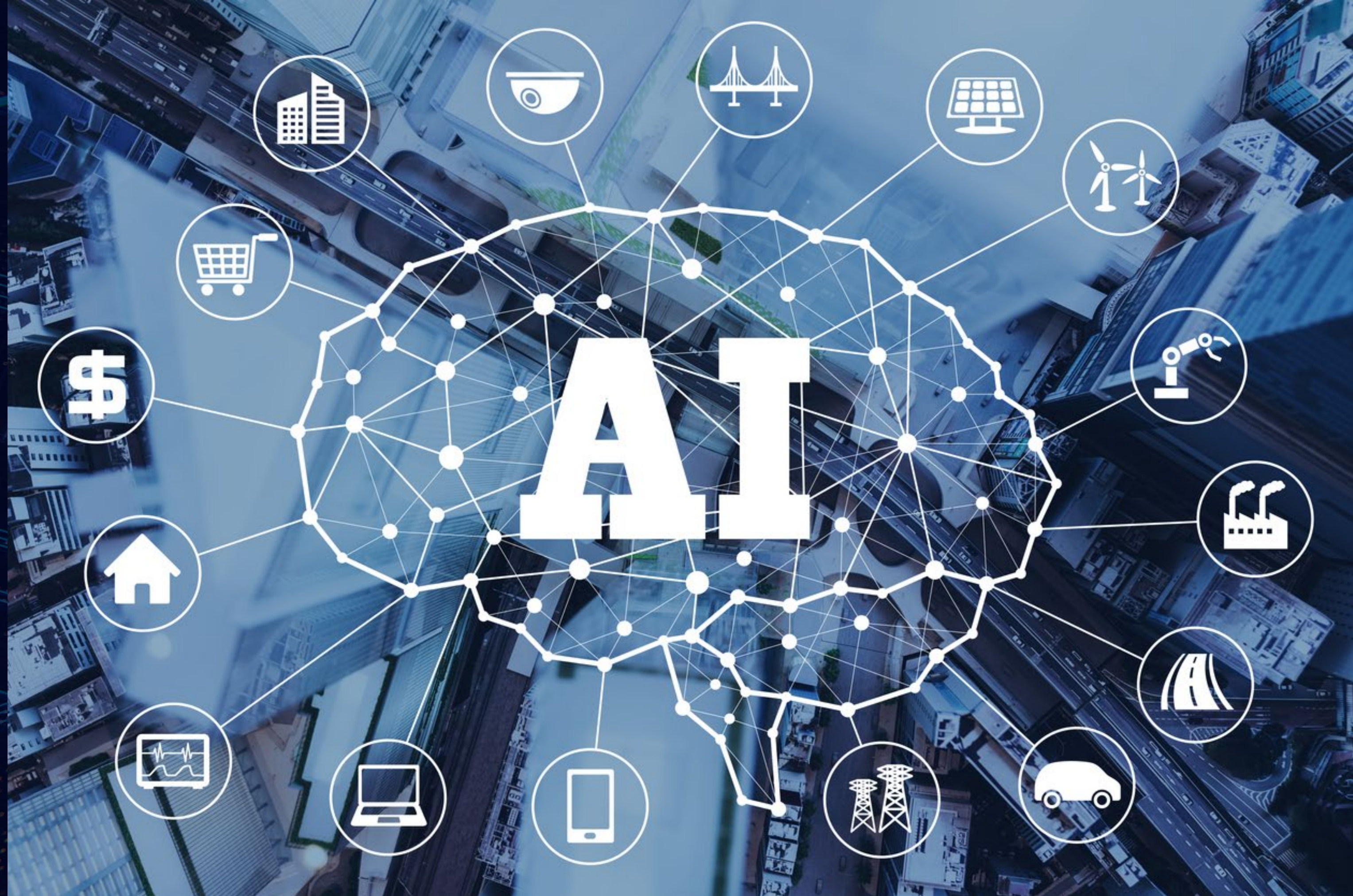# ARTIFICIAL INTELLIGENCE

CWC District II

July 20, 2024

When did AI start?

1955

Waves of AI

1. Hand Crafted Knowledge

Experts in rules
(ex. Tax Preparation Software)
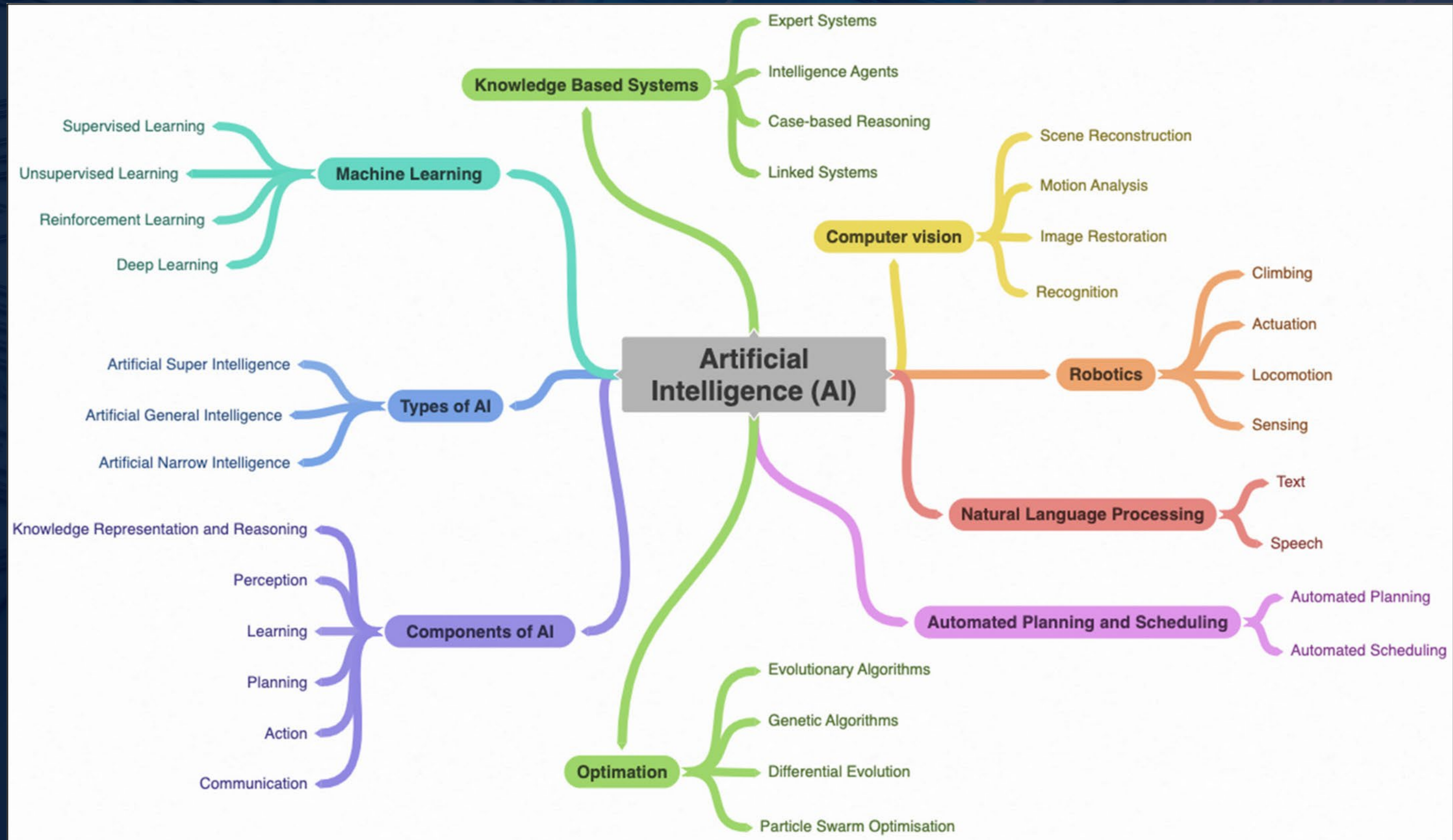
2. Statistical Learning

Machine Learning
(ex. Facial Recognition)

3. Contextual Reasoning

Reason in Context
(ex. Apple's Siri)

Aspects of AI

Challenges

- Ethics

- Lack of Gender Diversity in Technology/Bias

- Systems and Infrastructure

- Privacy Issues (HIPPA, etc)
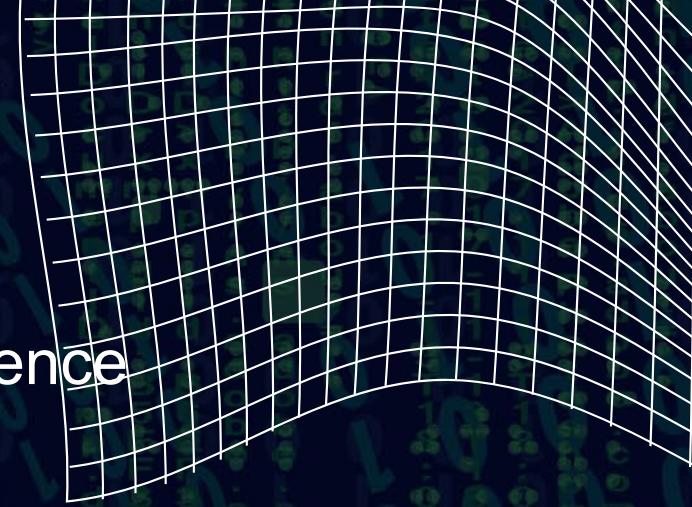
- Creator Content (Arts)

→

Federal Guidance

Executive Order: Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence

8 Principles

• Artificial Intelligence must be safe and secure

• Promoting responsible innovation, competition, and collaboration will allow the United States to lead in AI and unlock the technology's potential to solve some of society's most difficult challenges

• The responsible development and use of AI require a commitment to supporting American workers.

• Artificial Intelligence policies must be consistent with my Administration's dedication to advancing equity and civil rights.

• The interests of Americans who increasingly use, interact with, or purchase AI and AI-enabled products in their daily lives must be protected.

• Americans' privacy and civil liberties must be protected as AI continues advancing.

• It is important to manage the risks from the Federal Government's own use of AI and increase its internal capacity to regulate, govern, and support responsible use of AI to deliver better results for Americans.

• The Federal Government should lead the way to global societal, economic, and technological progress, as the United States has in previous eras of disruptive innovation and change.
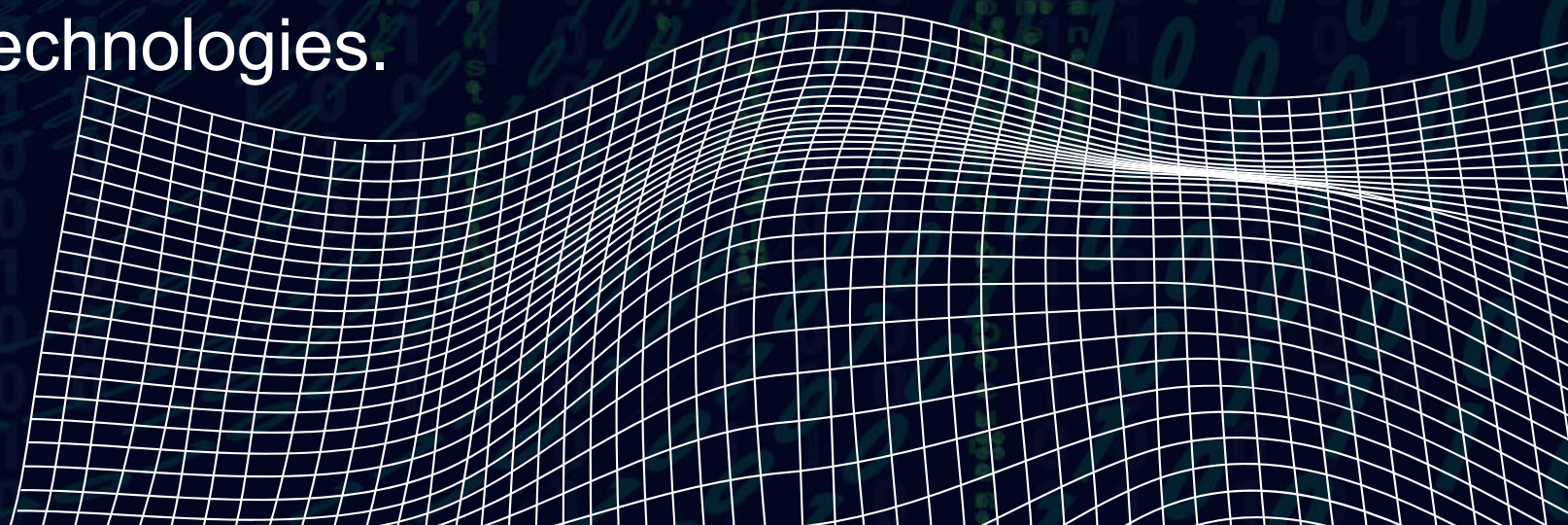
State of CA Guidance
On Generative AI

Executive Order N-12-23 (State of California)

The order focuses on the use of generative artificial intelligence by the State, as well as preparation of certain reports assessing the equitable use of GenAI in the public sector. The order calls for a multiyear effort starting in 2023-2025

SB 1047 Aims to ensure the safe development of large-scale artificial intelligence systems by establishing clear, predictable, common-sense safety standards for developers of the largest and most powerful AI systems.

SB 896 The Generative Artificial Intelligence Accountability Act, aims to guide the decision-making of state agencies, departments and subdivisions in the review, adoption, management, governance and regulations of automated decision-making technologies.

AI in Local Government Con't

General City Applications:

- Optimization of Social media content posting

- Utility analytics (Leak detection capabilities)

- Completeness review for permits
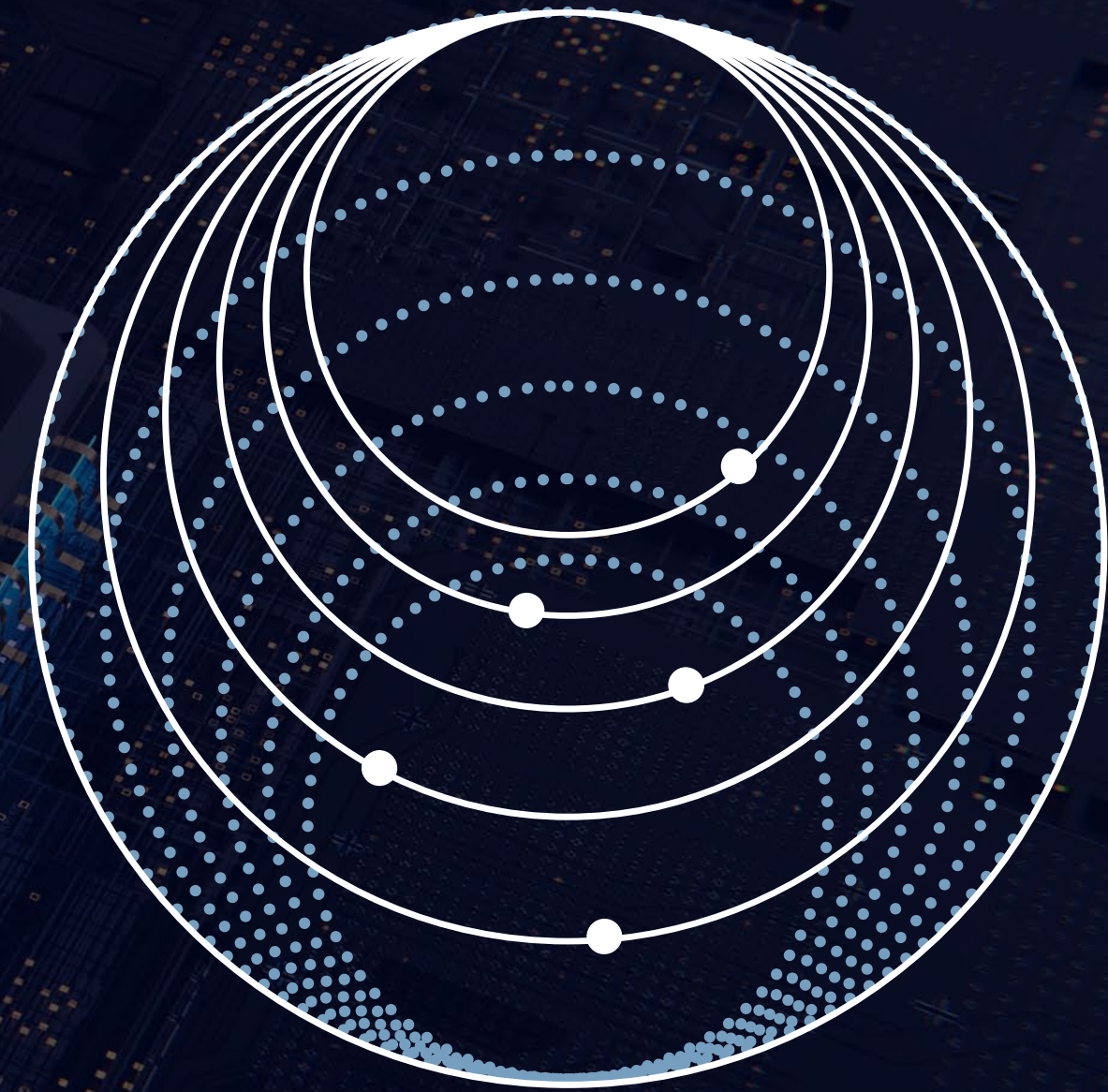
- Generating Job descriptions
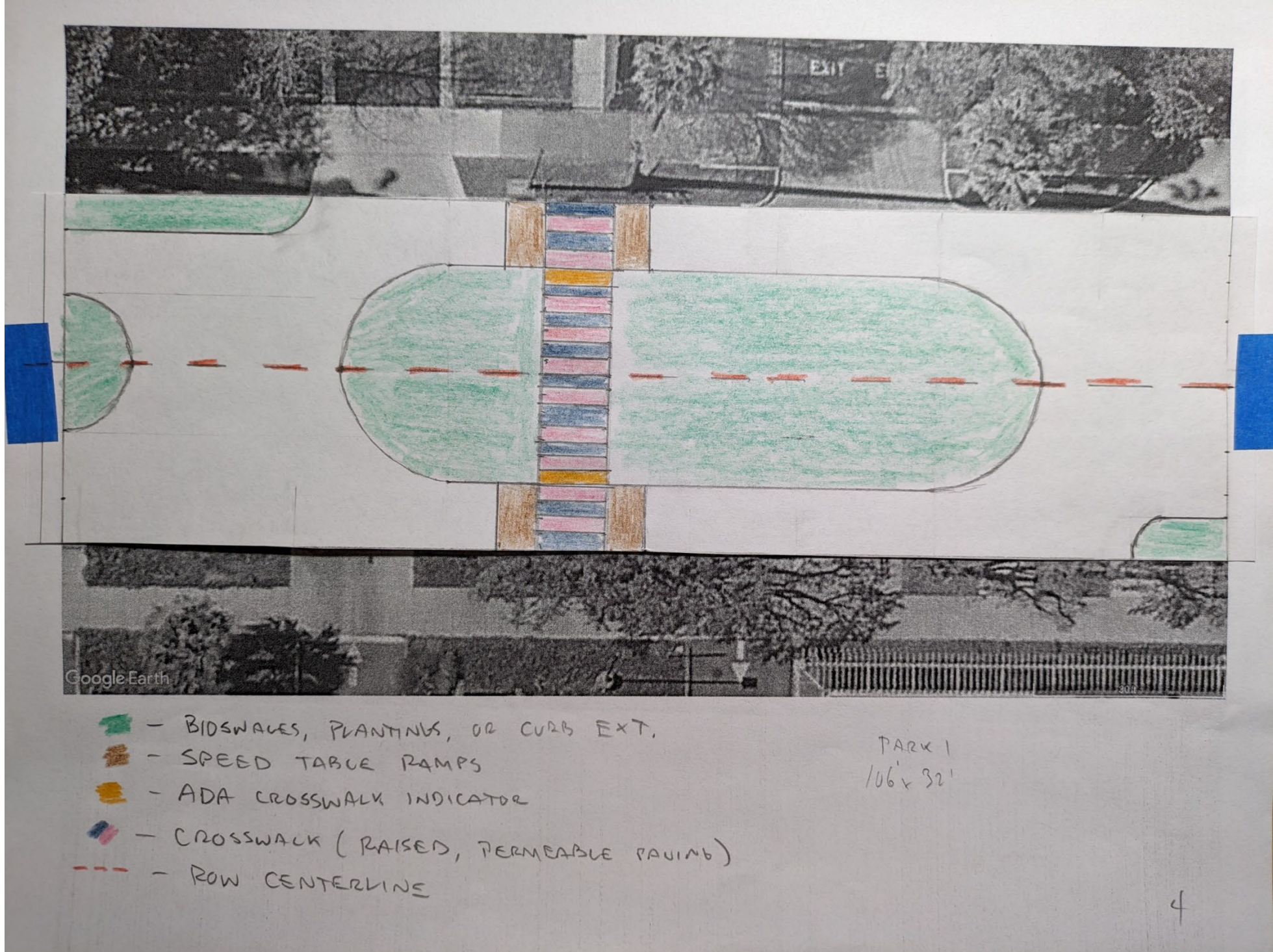
AI in Local Government

Police Applications:

- Using image recognition technology to automatically recognize license plates, car makes and models

- Predictive analytics can be used to help determine where crime is likely to take place

- Social media monitoring to monitor flash points in communities

- DNA analysis to establish whether particular people were in contact with specific pieces of evidence or at a particular place.

- Chat bots to engage with community members for non 911 emergencies

Sources: Frank Chen, "Exploring AI for Law Enforcement: Insight from an Emerging Tech Expert," interviewed by Chris Hsiung, *Police Chief Online*, September 20, 2023.

AI in Education

- Speech-to-text and text-to-speech technologies aiding students with hearing or speech impairments

- Graphic design assistant

- Image generation

- AI Tutoring can develop individualized programs

- Grading papers

- Scheduling time

- Detecting plagiarism in assignments.

- BIOSWALES, PLANTINGS, OR CURB EXT.
- SPEED TABLE RAMPS
- ADA CROSSWALK INDICATOR
- CROSSWALK (RAISED, PERMEABLE PAVING)
- ROW CENTERLINE

PARK 1
106' × 32'

AI Use Cases: Dept of Labor

ID	AI Use Case Name	Summary of Use Case	Stage of Development	AI Technique
5	Claims Document Processing	To identify if physicians note contains causal language by training custom natural language processing models.	Implementation	Natural language processing for (a) document classification and (b) sentence-level causal passage detection
6	Website Chatbot Assistant	The chatbot helps the end user with basic information about the program, information on who to contact, or seeking petition case status.	Implementation	Cloud based commercial-off-the-shelf pre-trained chatbot
10	Official Document Validation	AI detection of mismatched addresses and garbled text in official letters sent to benefits recipients.	Implementation	Computer Vision
13	Automatic Document Processing	Automatic processing of continuation of benefits form to extract pre-defined selection boxes.	Implementation	Cloud based commercial-off-the-shelf pre-trained NLP models

Department of Labor Wage and Hour Division issued a field Field Assistance Bulletin in April 2024 AI and other automated systems can provide ways to streamline tasks for employers, improve workplace efficiency and safety, and enhance workforce accountability. However, without responsible human oversight, the use of such technologies may pose potential compliance challenges concerning federal labor standards."

AI in Transportation

Applications of AI in Transportation

- Advanced Driver Assistance Systems and Automated Driving Systems (Semi Fully Autonomous Vehicles)
- Accessible Transportation (tailoring trips)
- Traveler Decision Support Tools (Flight trackers, BART real time tracking, etc.)
- Transit Operations and Fleet Management
- Remote Sensing (using cameras and other sensor for dynamic traffic management and curb management)

Department of Transportation just issued RFI looking at potential areas for funded AI research and development that will span all modes of transportation and mobility

AI in Medical Field

Applications of AI in Medicine

- Diagnostics assistance (Xrays, MRI scans, dermatology diagnoses, etc.)
- Drug Discovery (looking a biological and chemical data)
- Virtual Health Assistants (chat bots, appointment scheduling, reminders)
- Personalized Medicine (customized treatment plans)
- Robot-assisted surgery
- Natural Language processing for health care records (billing, coding and data management)
- Genomics (help with sequencing and identifying patterns and mutations)
- Mental Health Support (Chat bots)

Piloting Generative AI

45%

Source: Gartner Poll, August 2023

Companies in Production Mode of Generative AI

10%

THANK YOU