AI – opportunity and responsibility

Shana Matthews

Microsoft

Azure

AI – opportunity and responsibility

Shana Matthews

Program Manager

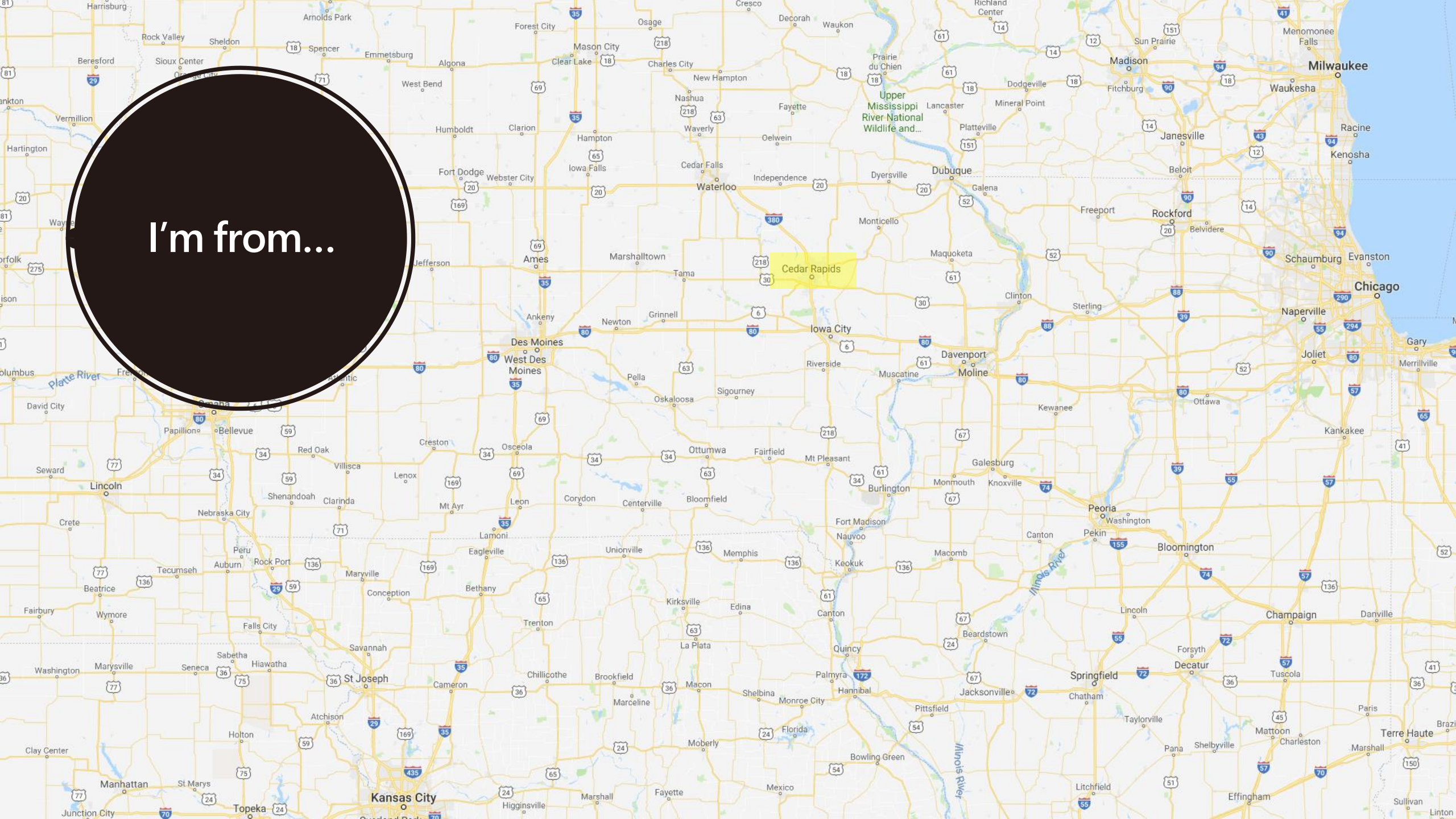
ICISTS

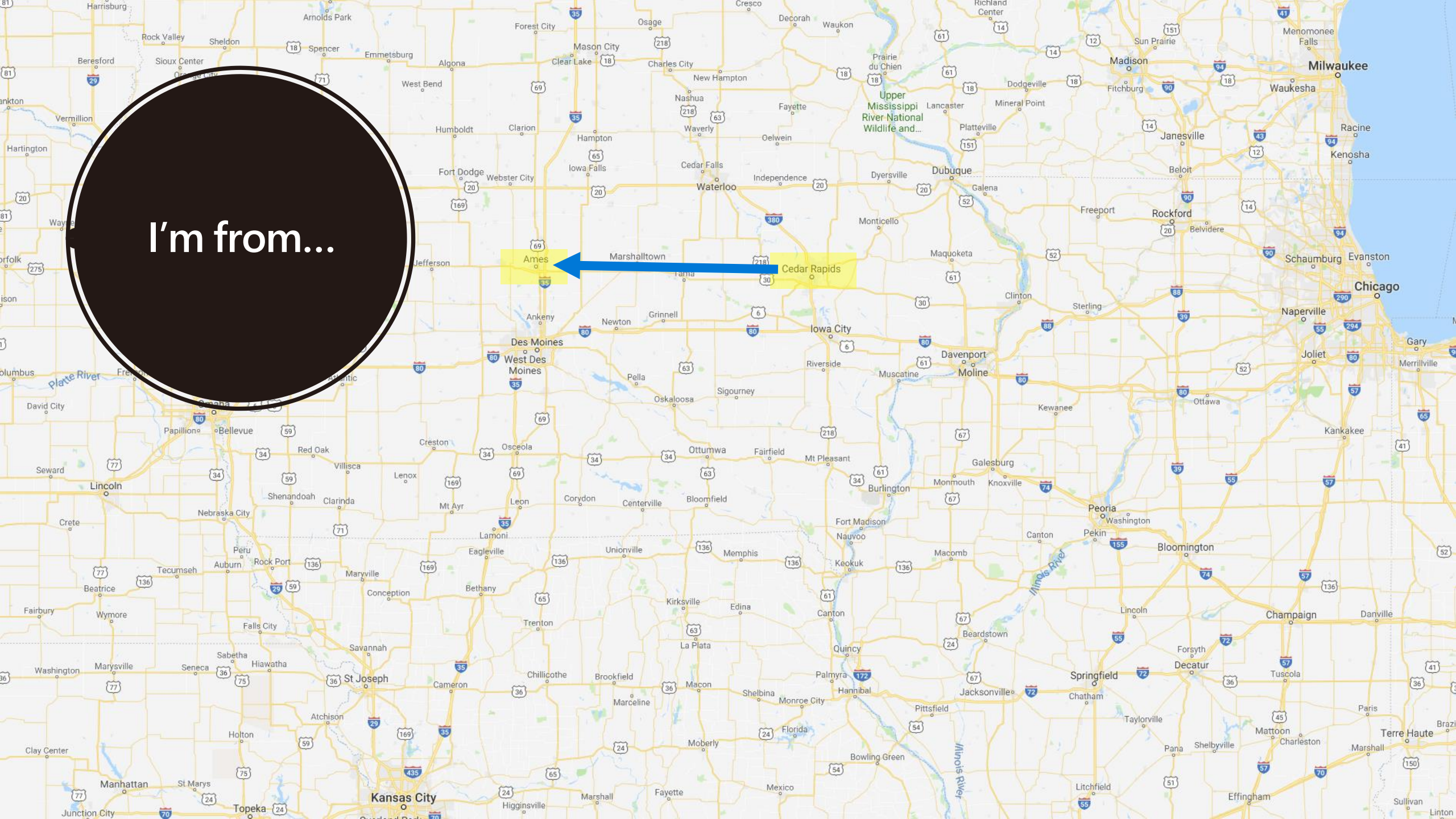
AI – opportunity and responsibility

What is AI
AI & Privacy
Regulations
Demo
Wrap up

Program Manager
Azure Student Developer Advocacy
@shanamatthews


I’m from...
Canada
ALBERTA
MANITOBA
SASKATCHEWAN
NEWFOUNDLAND AND LABRADOR
ONTARIO
QUEBEC
NORTH DAKOTA
MONTANA
MINNESOTA
NB
PE
Ottawa
Montreal
SOUTH DAKOTA
WISCONSIN
MAINE
NOVA SCOTIA
OREGON
IDAHO
MICHIGAN
Toronto
VT
NH
WYOMING
NEW YORK
Chicago
IOWA
MA
CT RI
NEBRASKA
ILLINOIS
OHIO
PENN
NEVADA
United States
INDIANA
Philadelphia
MD
DE
NJ
UTAH
COLORADO
KANSAS
MISSOURI
WEST VIRGINIA
San Francisco
KENTUCKY
VIRGINIA
CALIFORNIA
Las Vegas
OKLAHOMA
TENNESSEE
NORTH CAROLINA
Los Angeles
ARKANSAS
ARIZONA
NEW MEXICO
MISSISSIPPI
SOUTH CAROLINA
San Diego
Dallas
ALABAMA
GEORGIA
TEXAS
LOUISIANA
Houston
FLORIDA


I’m from...
Cedar Rapids
Iowa City
Des Moines
West Des Moines
Waterloo
Dubuque
Davenport
Moline
Rockford
Chicago
Milwaukee
Madison
Peoria
Springfield
Champaign
Bloomington
Decatur
Kansas City
St Joseph
Omaha
Lincoln
Topeka
Quincy
Burlington
Ottumwa
Fort Madison
Keokuk
Clinton
Marshalltown
Ames
Fort Dodge
Mason City
Waterloo
Platte River
Illinois River
Upper Mississippi River National Wildlife and...


I’m from…
Ames
Cedar Rapids

Shana Matthews

MapControl Class

Namespace: Windows.UI.Xaml.Controls.Maps

Assemblies: Windows.UI.Xaml.Controls.Maps.dll, Windows.dll

Represents a symbolic or photorealistic map of the Earth. Edit

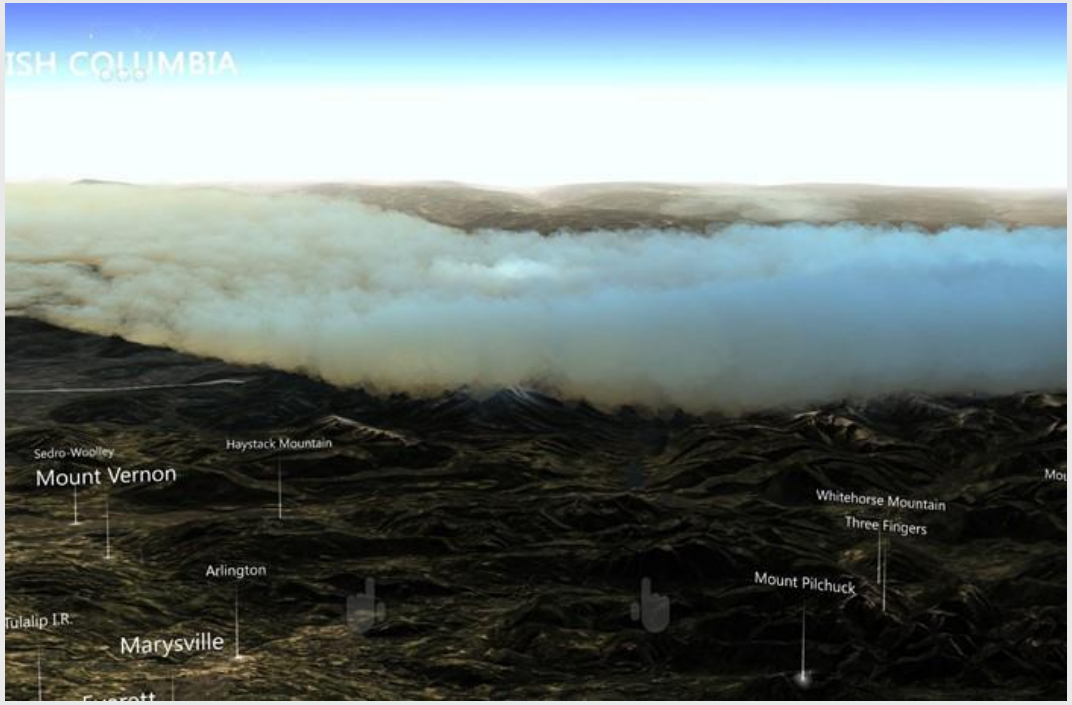
C# Copy

```
public sealed class MapControl : Control, IMapControl, IMapControl2, IMapControl3,
IMapControl4, IMapControl5
```

XAML Copy

```
<!-- xmlns:Maps="using:Windows.UI.Xaml.Controls.Maps" -->

<Maps:MapControl/>
- or -
<Maps:MapControl></Maps:MapControl>
```

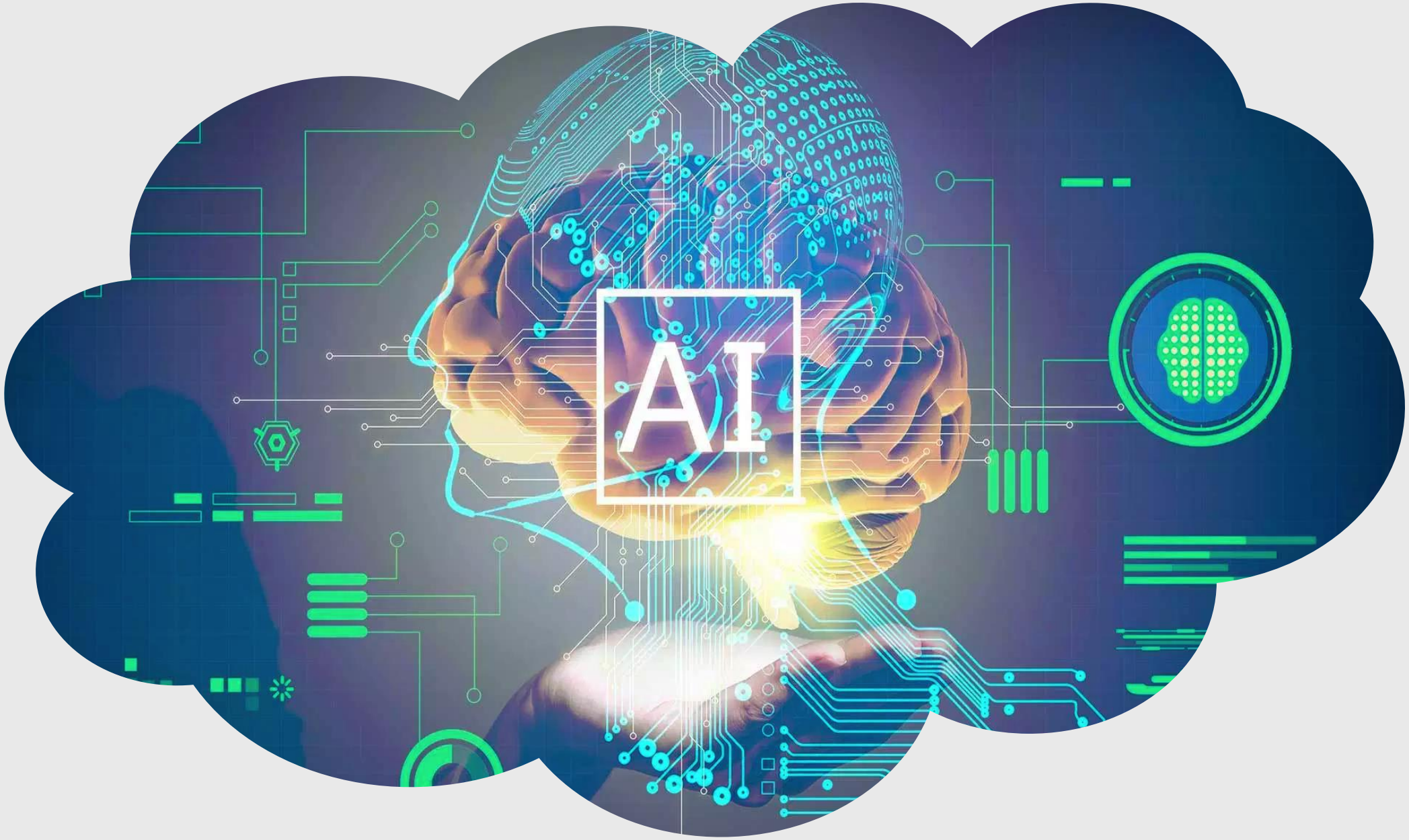


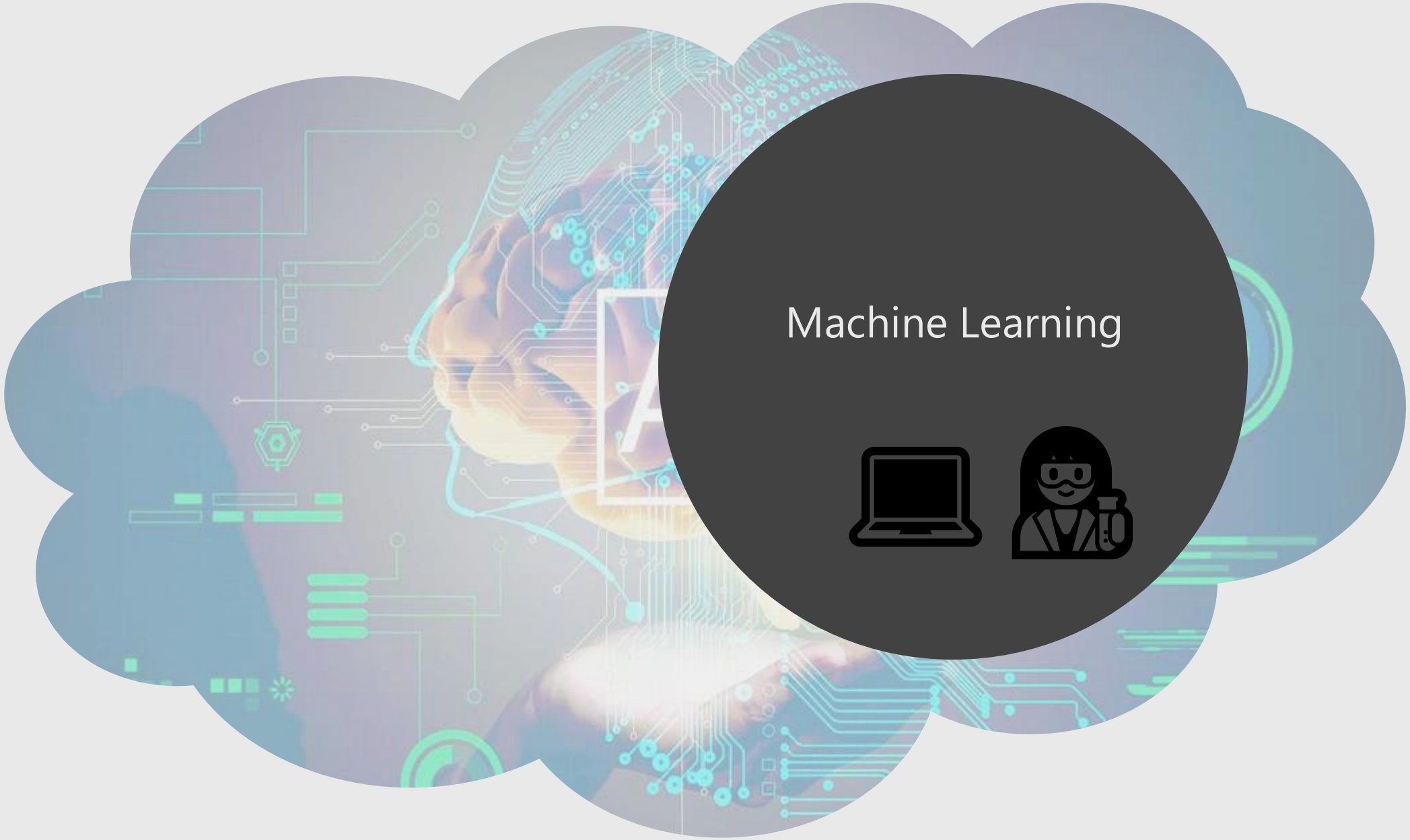
I like...

python
knitting
lifting weights

Microsoft  Linux

What is AI?

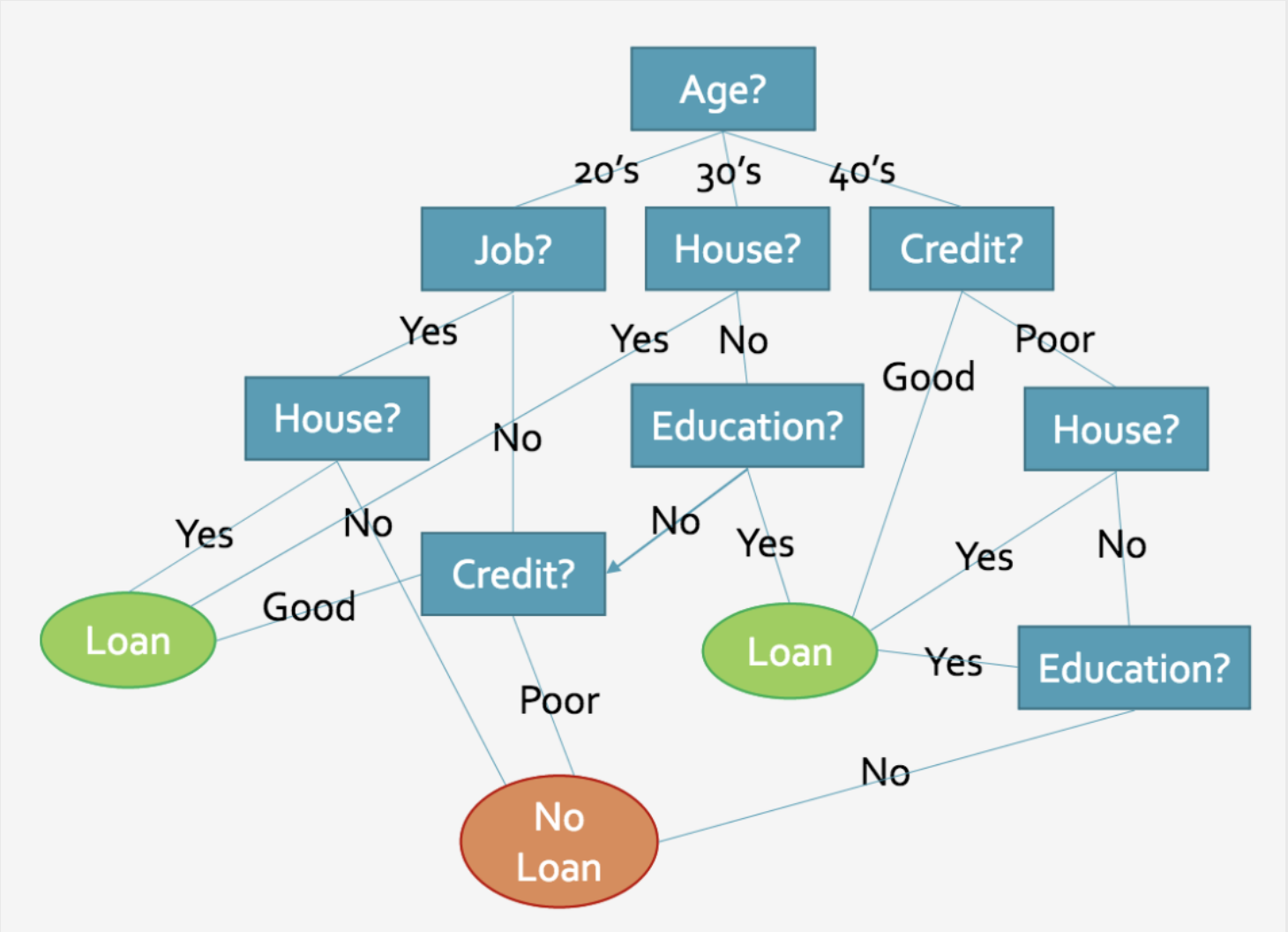




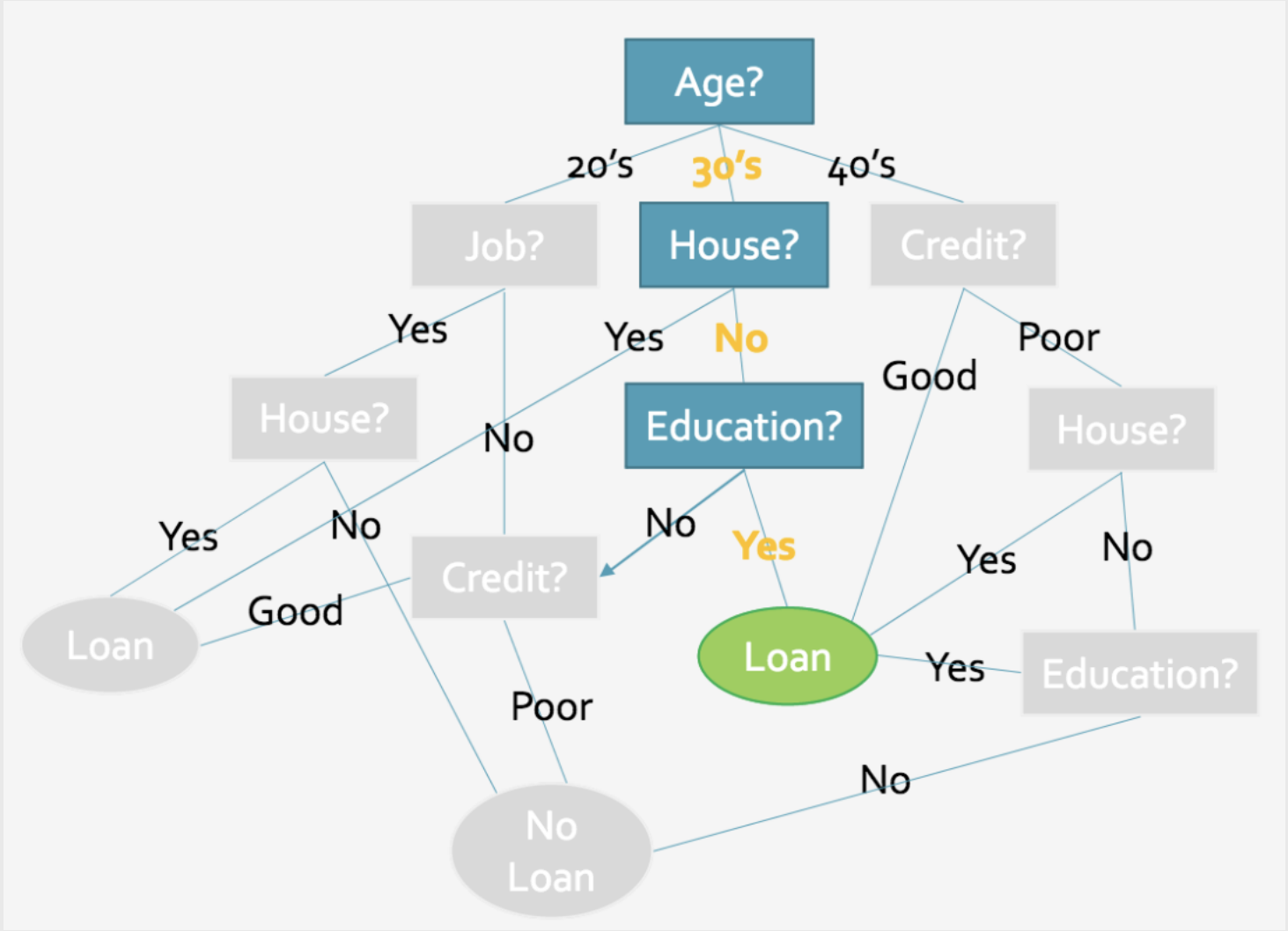
Previously…

Age	Has_Job	Owns_House	Credit_Rating	Education	Defaulted?
22	Yes	No	Good	Graduate	No
47	Yes	Yes	Poor	High School	No
35	Yes	No	Poor	High School	Yes
21	No	No	Good	College	Yes
50	Yes	Yes	Good	Graduate	No
42	Yes	No	Poor	Graduate	No
…	…	…	…	…	…
…	…	…	…	…	…

Previously…

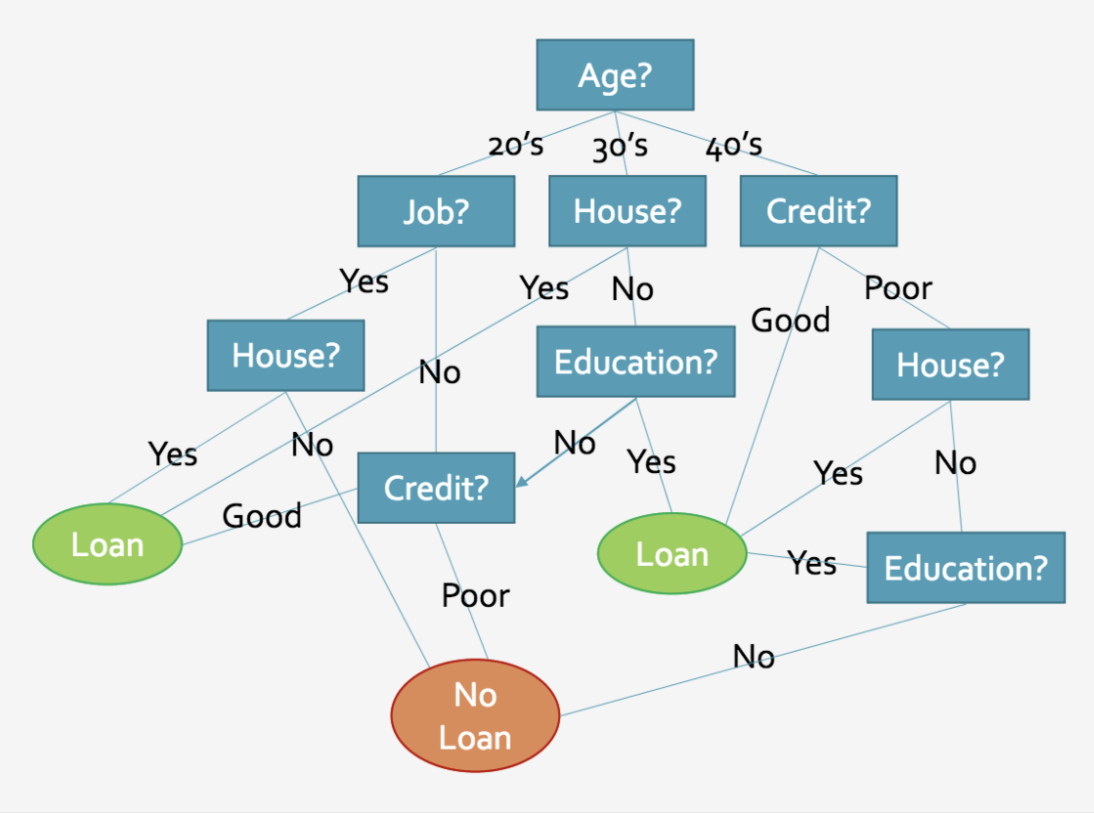


Previously…



35	Yes	No	Poor	College	LOAN

Previously…




```
def give_loan(person):
    if person.age >= 20 and person.age < 30:
        if person.has_job == True:
            if person.has_house == True:
                return True
            else:
                return False
        else:
            if person.good_credit == True:
                return True
            else:
                return False

    elif person.age >=30 and person.age < 40:
        if person.has_house == True:
            return True
        else:
            if person.college == True:
                return True
            else:
                if person.good_credit == True:
                    return True
                else:
                    return False

    elif person.age >= 40:
        if person.good_credit == True:
            return True
        else:

          . . .
```

With machine learning

Age	Has_Job	Owns_House	Credit_Rating	Education	Defaulted?
22	Yes	No	Good	Graduate	No
47	Yes	Yes	Poor	High School	No
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…	…	…	…	…	…
…	…	…	…	…	…

```python
def give_loan(person):
    if person.age >= 20 and person.age < 30:
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                return False
        else:
            if person.good_credit == True:
                return True
            else:
                return False

    elif person.age >=30 and person.age < 40:
        if person.has_house == True:
            return True
        else:
            if person.college == True:
                return True
            else:
                if person.good_credit == True:
                    return True
                else:
                    return False

    elif person.age >= 40:
        if person.good_credit == True:
            return True
        else:

          . . .
```

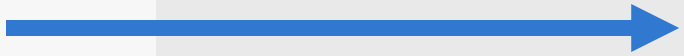

With machine learning

```
import numpy as np
import pandas as pd

loans = Table.read_table('loans.csv')
X = loans.iloc[:, :-1].values
y = loans.iloc[:, 4].values

from sklearn.model_selection import train_test_split
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.20)

from sklearn.preprocessing import StandardScaler
scaler = StandardScaler()
scaler.fix(X_train)

X_train = scaler.transform(X_train)
X_test = scaler.transform(X_test)

from sklearn.neighbors import KNeighborsClassifier
classifier = KNeighborsClassifier(n_neighbors=5)
classifier.fit(X_train, y_train)

y_pred = classifier.predict(X_test)
```

With machine learning

```
import numpy as np
import pandas as pd

loans = Table.read_table('loans.csv')
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```
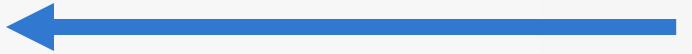

Boring data processing

```
from sklearn.neighbors import KNeighborsClassifier
classifier = KNeighborsClassifier(n_neighbors=5)
classifier.fit(X_train, y_train)

y_pred = classifier.predict(X_test)
```



The good stuff

AI and Privacy

MEDICAL & BIOTECH

Can a Crowdsourced AI Medical Diagnosis App Outperform Your Doctor?

GM will make an autonomous car without steering wheel or pedals by 2019

:Bugging-eye emoji:

At CES 2018 Intel unveiled a prototype chip, Loihi, that mimics the architecture of the human brain for adaptable AI processing on the edge.

Climate-Change Research Is Getting a Big Dose of AI

engadget

Microsoft app helps blind people 'see' the world with AI

How a 'Starcraft' Tournament Unlocks Future of AI

TACOMA PUBLIC SCHOOLS

Analyzed student behaviors to help boost graduation rates from 55 to 82%

"We're responsible for building AI advances that amplify human ingenuity, and also that reflect our shared societal values and expectations."

—Harry Shum, Executive Vice President, AI and Research

"We have to have a diverse group of people working on AI, otherwise it's simply not going to end up being as good as it should be."

—Lili Cheng, Corporate Vice President, AI and Research

Regulations

GDPR

Stay educated

Data privacy global news sources:

- Medium – “data privacy” tag [https://medium.com/tag/data-privacy/latest]
- New York Times – Privacy section [https://www.nytimes.com/topic/subject/privacy]
- Reddit

Handle your data securely

GLOBAL

ISO 27001

ISO 27018

ISO 27017

ISO 22301

SOC 1 Type 2

SOC 2 Type 2

SOC 3

CSA STAR Self-Assessment

CSA STAR Certification

CSA STAR Attestation

US GOV

Moderate JAB P-ATO

High JAB P-ATO

DoD DISA SRG Level 2

DoD DISA SRG Level 4

DoD DISA SRG Level 5

SP 800-171

FIPS 140-2

Section 508 VPAT

ITAR

CJIS

IRS 1075

INDUSTRY

PCI DSS Level 1

CDSA

MPAA

FACT UK

Shared Assessments

FISC Japan

HIPAA / HITECH Act

HITRUST

GxP 21 CFR Part 11

MARS-E

IG Toolkit UK

FERPA

GLBA

FFIEC

REGIONAL

Argentina PDPA

EU Model Clauses

UK G-Cloud

China DJCP

China GB 18030

China TRUCS

Singapore MTCS

Australia IRAP/CCSL

New Zealand GCIO

Japan My Number Act

ENISA IAF

Japan CS Mark Gold

Spain ENS

Spain DPA

India MeitY

Canada Privacy Laws

Privacy Shield

Germany IT Grundschutz workbook

Be thoughtful

Demo

User location privacy

Code available at

aka.ms/license_plates

What you can do

Stay educated

Store your data securely

Be thoughtful

Thank you | Q+A

aka.ms/license_plates

aka.ms/azurenotebooks

aka.ms/azure4students

https://en.wikipedia.org/wiki/Privacy_by_design