

Microsoft Student Partners

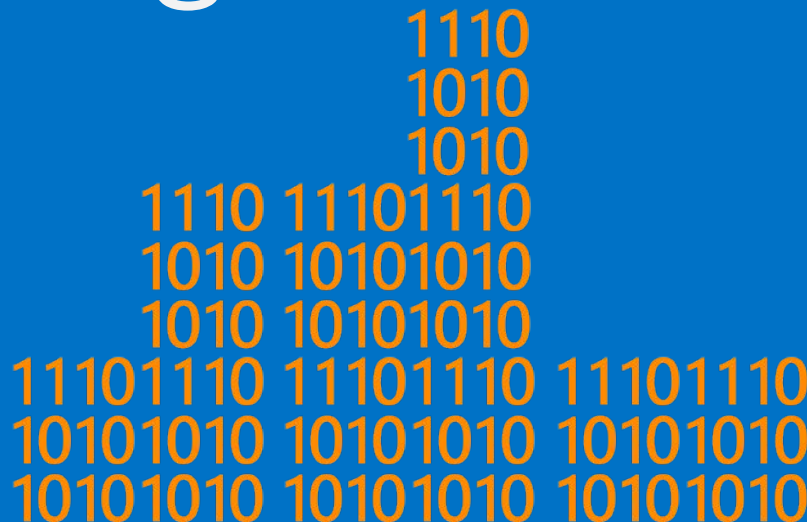
# Workshop 2: Azure & Machine Learning

Kunal Garg, Morgan Herrmann, & Quinn Wu

Nov 30th, 2017

Sign In:

<https://goo.gl/forms/3kvuSKZaFHgMZQaY2>



Intos

What  
is  
MSP

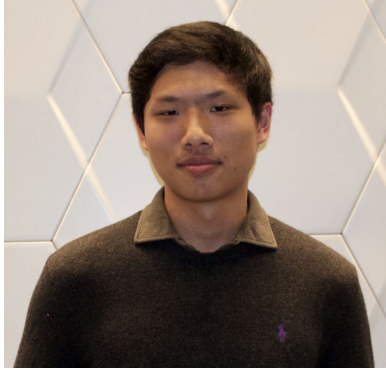
What  
is  
ML?

ML  
with  
Azure

Raffle

# Introduction:

11101110  
10101010  
10101010



- Quinn Wu
- Junior
- Microsoft Student Partner
- CIS & STAT (M&T)



- Kunal Garg
- Junior
- Microsoft Student Partner
- CIS & FNCE (M&T)



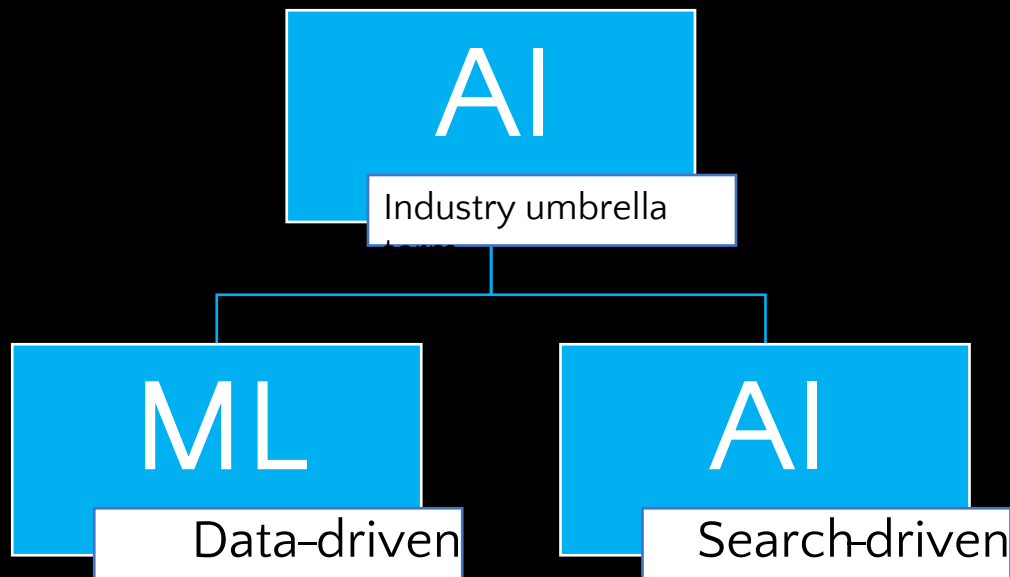
- Morgan Herrmann
- Sophomore
- Microsoft Student Partner
- Digital Media Design & Data Science

# Why is this event happening?

11101110  
10101010  
10101010

- What is MSP?
  - Monthly workshops/giveaways/garnering MS awareness
  - Apply in July
- Future workshop ideas?
- Where can Microsoft be a part of your education
  - Clubs? i.e. PER & PAC
  - Software?

# What is AI (vs. ML)?



## Artificial Intelligence

AI is the broadest term and applies to all techniques that mimic human intelligence

### Machine Learning

The subset of AI tasks that use statistical techniques that enable machines to learn from experience (data)

### Deep Learning

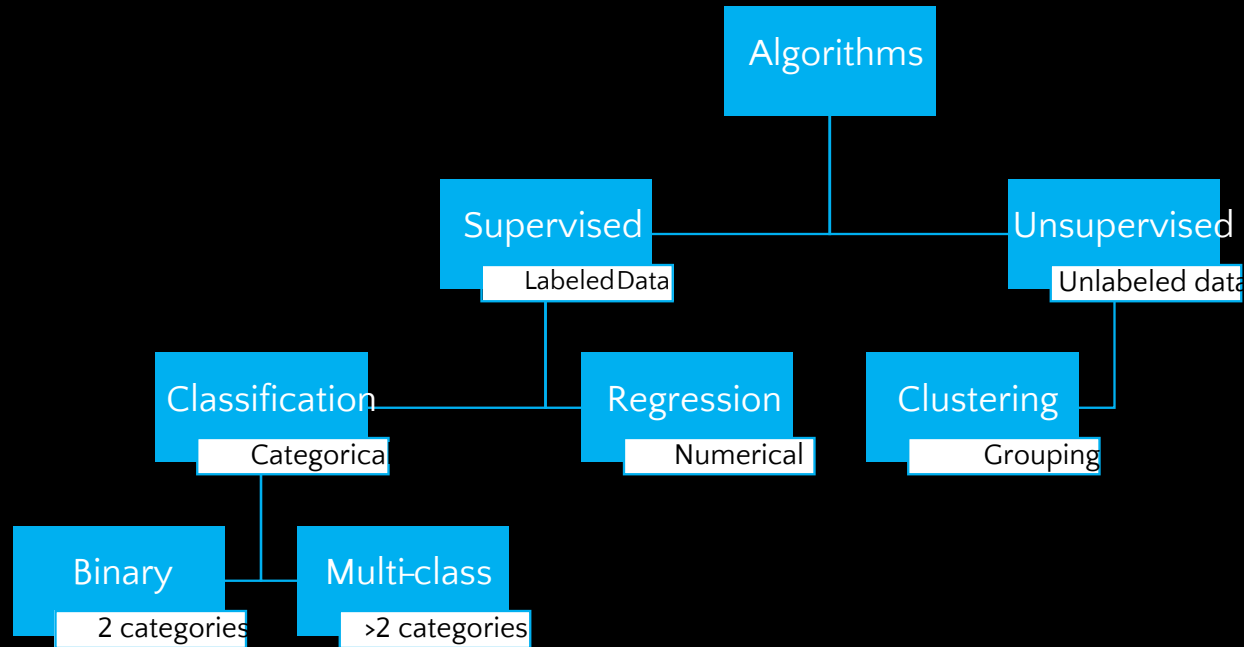
The subset of machine learning that enables software to train itself to perform tasks, like speech and image recognition, by exposing multilayered neural networks to vast amounts of data

# Nuts and Bolts: Supervised Learning

- Using AI to determine an  $A \rightarrow B$  (input to response) mapping
- Have a machine “learn” these mappings

A	B
Email	Spam?
Image	Object
Audio	Text
Housing data	Price
Ads, users	Click?

# Types of Machine Learning Algorithms



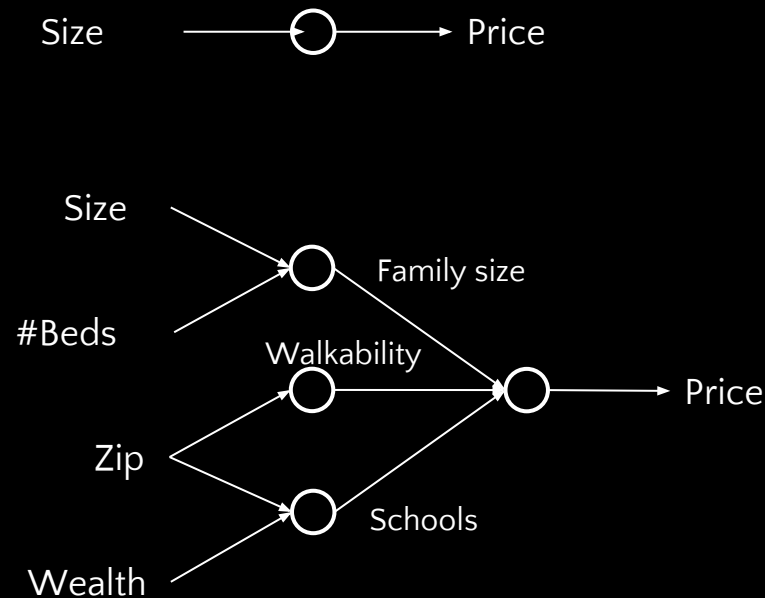


# Nuts and Bolts: Supervised Learning

- Using AI to determine an A  $\rightarrow$  B (input to response) mapping
- Have a machine “learn” these mappings

A		B
Email		Spam? Binary classification
Image		Object Classification
Audio		Text Multiclass classification
Housing data		Price Regression
Ads, users		Click? Binary classification

# Neural Networks



# Microsoft AI Infrastructure & Services



Cognitive services



Bot framework



Easy to consume  
AI for developers



Data Science tools – Azure ML

Data preparation, modeling, and operationalization



Comprehensive  
ML and AI capabilities for  
Data Scientists

Algorithms – CNTK



Best of Microsoft research  
and open source

Hyperscale hardware innovation (scale, GPU, FPGA) – Azure Compute



Leading hardware, at scale,  
on demand

# Cognitive Services and ML

Developers

Data Scientists

## Finished APIs General Models

Computer Vision  
Bing Search  
Text Analytics

## Custom Training

Language Understanding  
Intelligent Services  
Recommendations  
Custom Vision Service  
Custom Speech Service

## Custom Model Development

Azure ML  
Cognitive Toolkit

# Workshop

<https://github.com/laurenttran/microsoft-ai-workshop>

- Log into Microsoft Imagine
- Verify your Student ID
- Register for Azure (Microsoft's Cloud Computing Tool)
- <https://github.com/quinnwu/microsoft-ai-workshop>
- <Create> & Edit

# Raffle

11101110  
10101010  
10101010

# Thank You! Please Sign In & Join our Facebook Page