

UNC Artificial Intelligence Club

First meeting

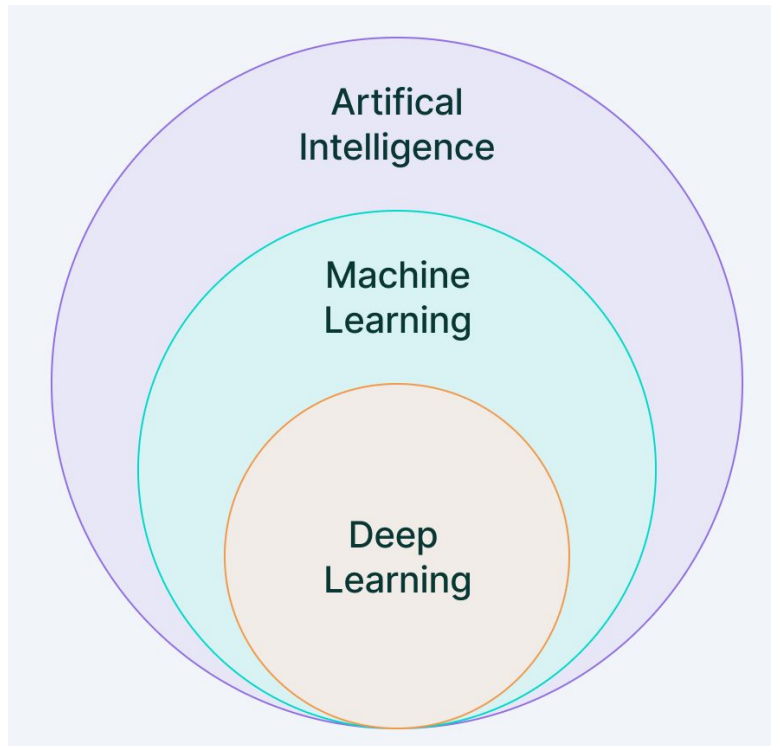
Vision and Goals

- Build projects
- Understand algorithms, math, datasets
- Identify trends, think creatively
- Original research
- Foster interest in AI
- Improve the Carolina community

Focus Areas

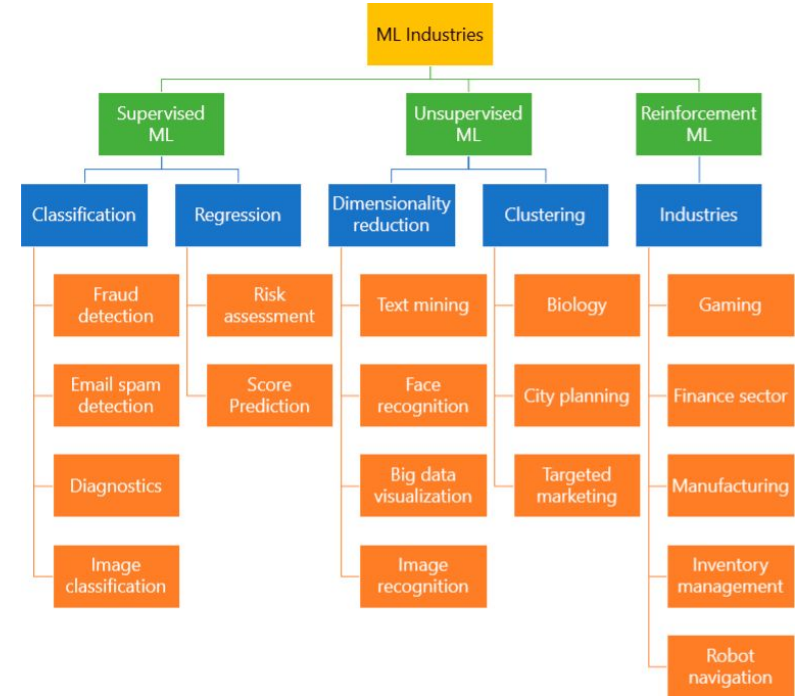
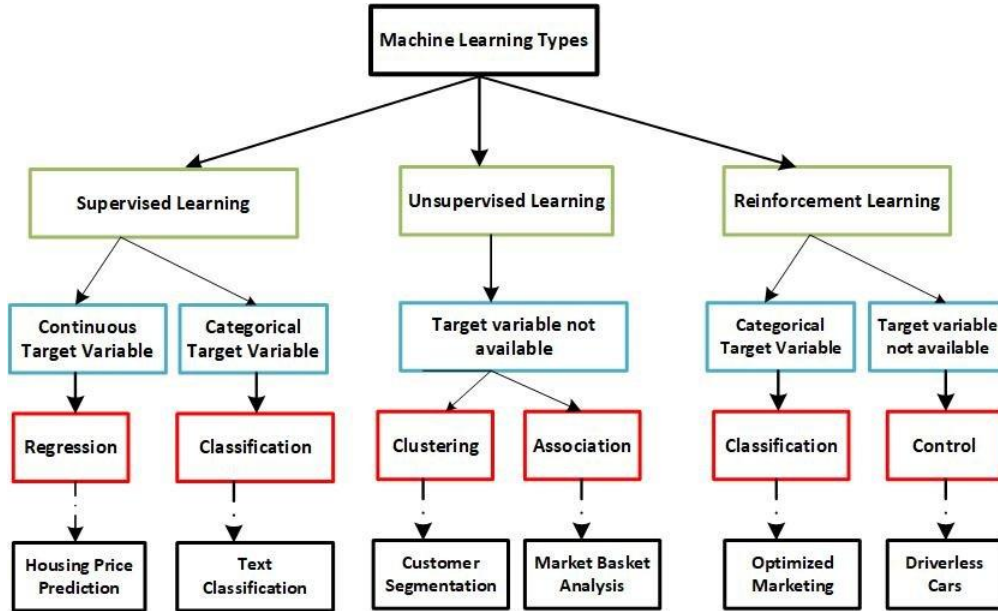
- Healthcare
- Finance
- Natural language
- Cybersecurity?

What is Artificial Intelligence (AI)?

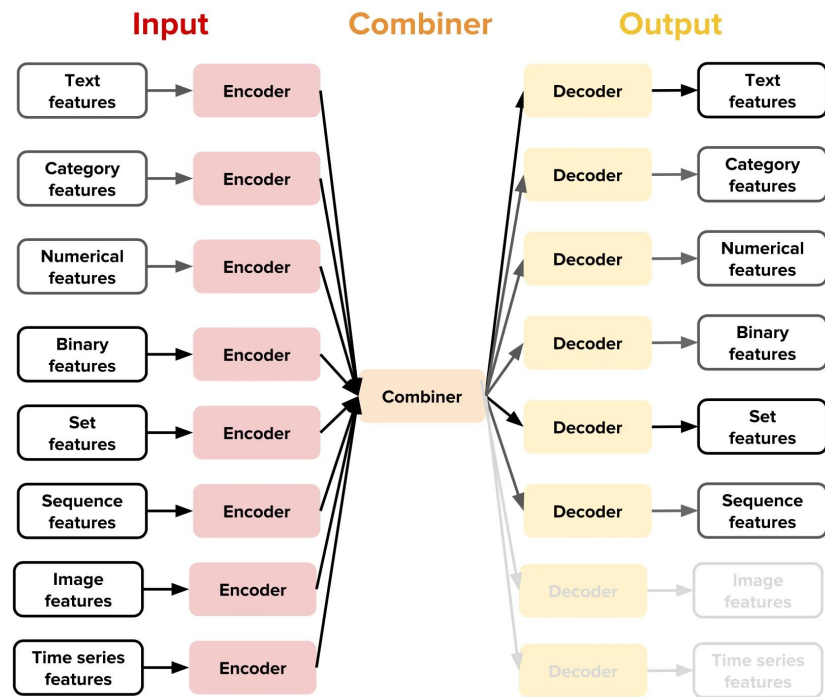
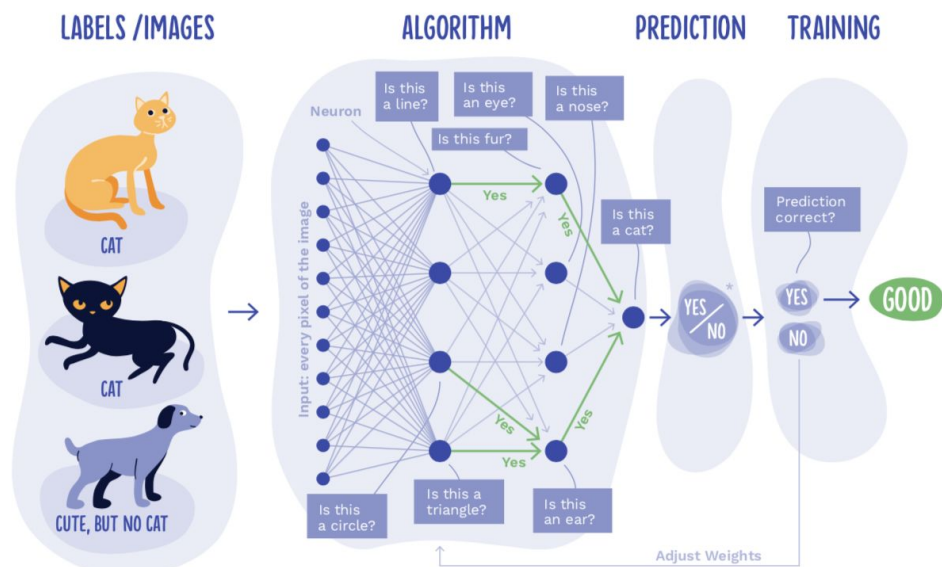


- Search and optimization
- Logic, inference
- Probabilistic (Bayesian networks)
- Machine learning
 - Neural nets and deep learning

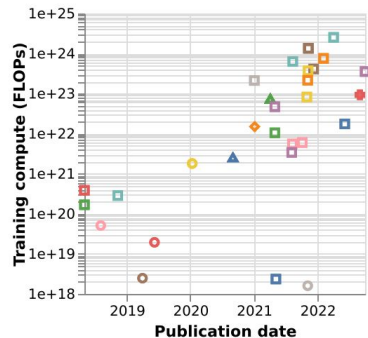
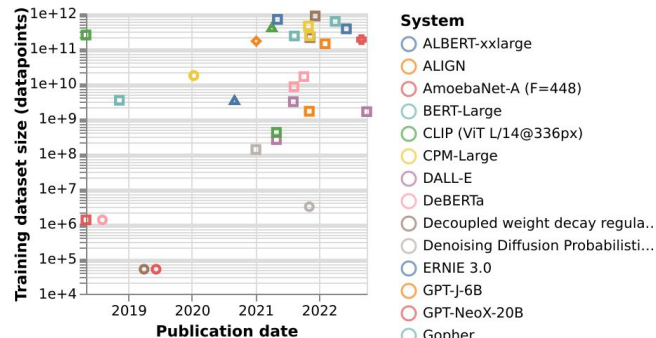
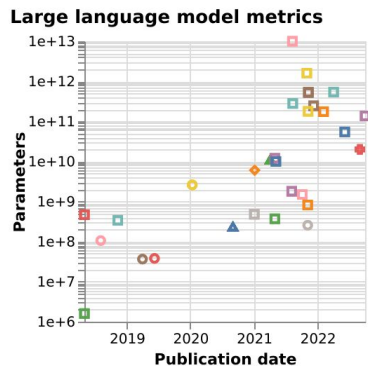
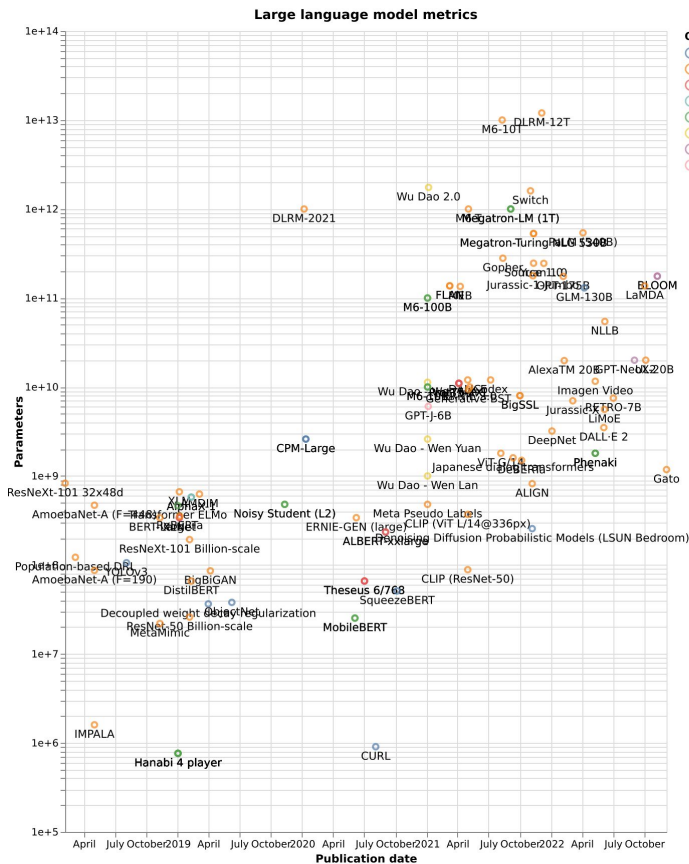
What can you do with ML?



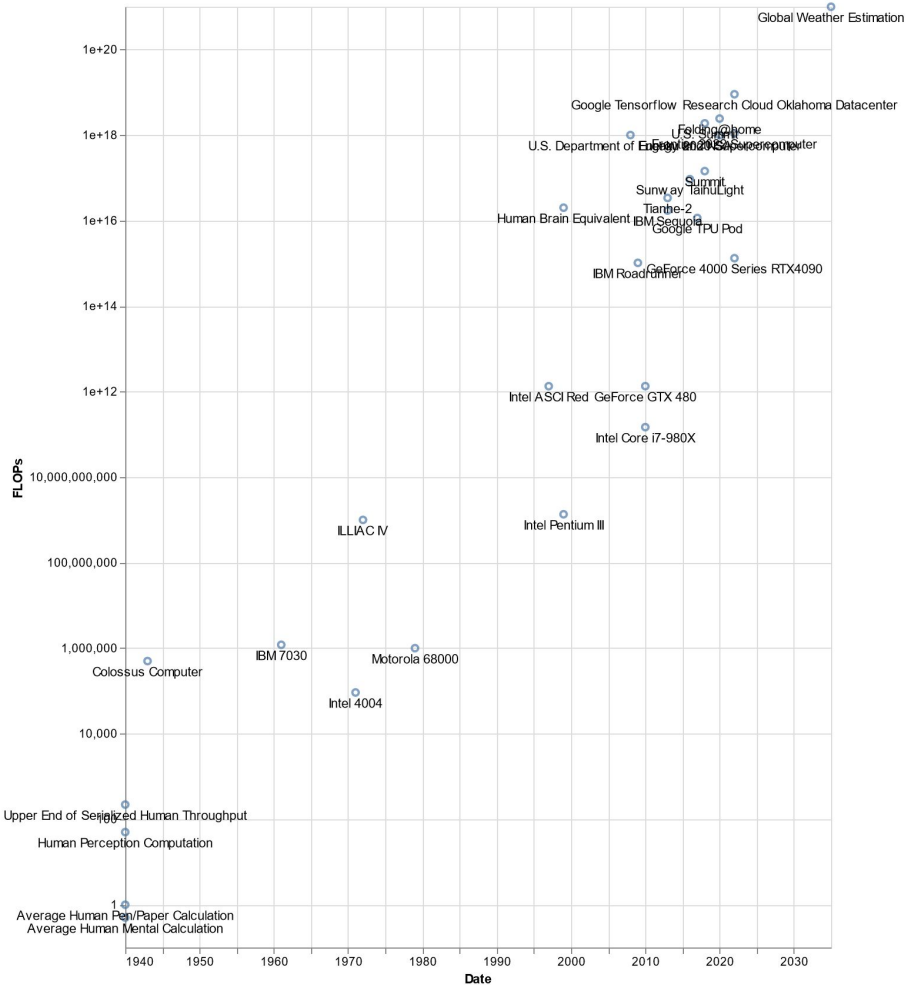
Deep Learning



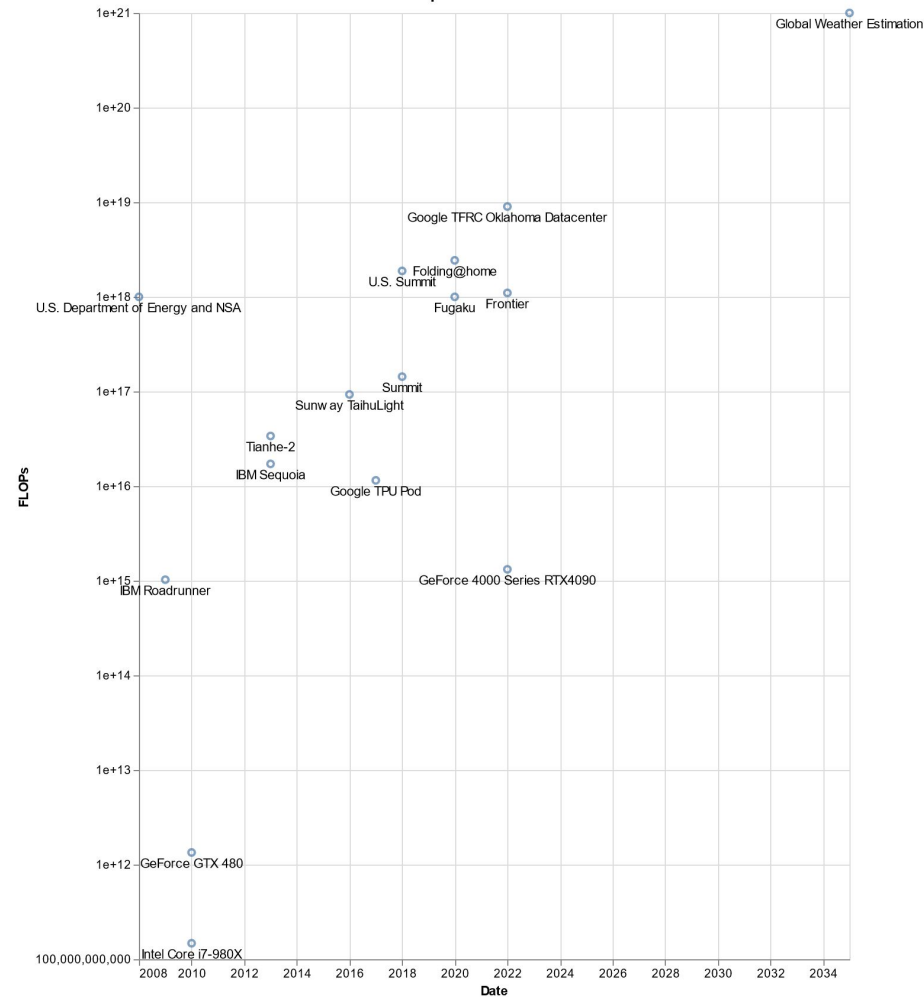
Recent trends: Scaling up



Compute FLOPs over time



Compute FLOPs over time



Getting started

Google Colab

colab.research.google.com

Why AutoML is awesome

- Fast (seconds or minutes)
- Good results

Dataset	Measure	Best		OpenML Attempts
		AutoML	OpenML	
Churn	AUC	0.919 (H2O AutoML)	0.930 (Pipeline)	5,132
Credit		0.803 (H2O AutoML)	0.800 (Ranger)	419,021
Diabetes		0.825 (rminer)	0.842 (XGB)	132,164
Qsar		1.000 (TransmogriAI)	0.938 (XGB)	147,659
Cmc	Macro F1	0.545 (Auto-Sklearn)	0.572 (Pipeline)	21,446
Dmft		0.236 (TransmogriAI)	0.262 (Pipeline)	19,445
Mfeat		0.745 (AutoGluon)	0.772 (Pipeline)	22,136
Vehicle		0.820 (AutoGluon)	0.870 (Pipeline)	23,532
Cholesterol	MAE	38.59 (TransmogriAI)	38.60 (Cforest)	160
Cloud		0.256 (TransmogriAI)	0.268 (Pipeline)	5
Liver Disorders		2.329 (Auto-Sklearn)	2.309 (Pipeline)	77
Plasma		152.3 (AutoGluon)	152.6 (Pipeline)	15