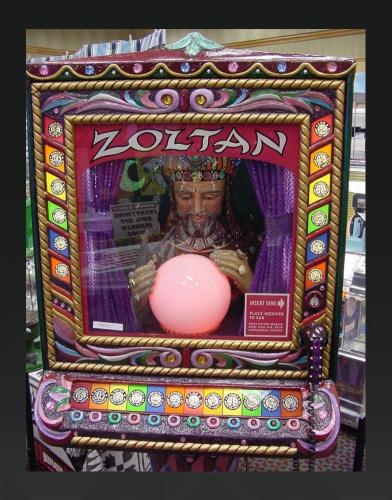
### The Future of Al

Julien Simon Global Technical Evangelist, Al & Machine Learning Amazon Web Services

@julsimon





Does Al have a massive future? Sure! Please insert another coin.

Do we (the builders) have a clear idea how to get there? Hmmmm.



# « If you want to know the future, look at the past »

Albert Einstein

What's our collective track record on understanding and implementing disruptive technologies?



Your

competitor



You

Your Web project



Your

competitor



You

Your
E-commerce
project



You

Your competitor

Your
Mcommerce
project



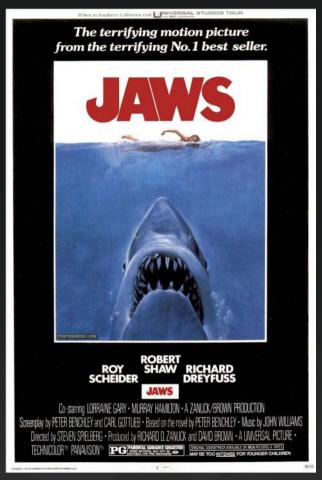


You

Your Big Data project

Your competitor





# The terrifying truth about tech projects

Delusional stakeholders
Business pressure
Unprepared team
Inadequate tools
Improvised tactics
Random acts of bravery



# « It's different this time! The AI revolution is here! Blah blah blah »

You know who



Your

competitor



Pictures

You

Your AI / ML project

Universal



# « Insanity is doing the same thing over and over again and expecting different results »

Whoever said it first



#### Tired of being shark food?

Delusional stakeholders
Business pressure
Unprepared team
Inadequate tools
Improvised tactics
Random acts of bravery



Set expectations
Define clear metrics
Assess your skills
Pick the best tool for the job
Use best practices
Iterate, iterate



#### 1 - Set expectations

- What is the business question you're trying to answer?
  - One sentence on the whiteboard
  - Must be quantifiable
- Do you have (enough) data that could help?
- Involve everyone and come to a common understanding
  - Business, IT, Data Engineering, Data Science, Ops, etc.

- « We want to see what this technology can do for us »
- « We have tons of relational data, surely we can do something with it »
- « I read this cool article about FooBar ML, we ought to try it »





#### 2 - Define clear metrics

- What is the business metric showing success?
- What's the baseline (human and IT)?
- What would be a significant and reasonable improvement?
- What would be reasonable further improvements?
- « The confusion matrix for our support ticket classifier has significantly improved ». Huh?
- « P90 time-to-resolution is now under 24 hours ». Err....
- « Misclassified emails have gone down 5.3% using the latest model ». So?
- « The latest survey shows that 'very happy' customers are up 9.2% ». Woohoo!



#### 3 - Assess your skills

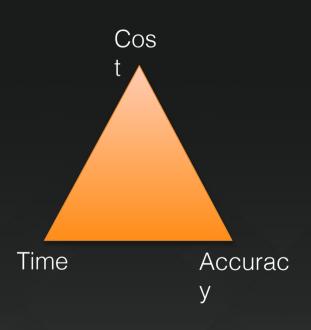
- Can you build a data set describing the problem?
- Do you know how to clean and curate it?
- Can you write and tweak ML algorithms?
- Can you manage ML infrastructure?
- ... Or do you only want to call an API and get the job done?





#### 4 - Pick the best tool for the job

- Cost, time to market, accuracy: pick two
- The least expensive and fastest option won't probably be the most accurate.
  - Maybe enough to get started, and learn more about the problem.
- Improving accuracy will take increasingly more time and money.
  - Diminishing returns! Know when to stop.
- Keep an eye on actionable state of the art advances, ignore the rest
  - Transfer learning
  - AutoML





#### 5 - Use best practices

- No, things are not different this time.
- Al / ML is software engineering
  - Dev, test, QA, documentation, Agile, versioning, etc.
  - Involve all teams

- Sandbox tests are nice, but truth is in production
  - Get there fast, as often as needed
  - CI / CD and automation are required
  - Devops for ML

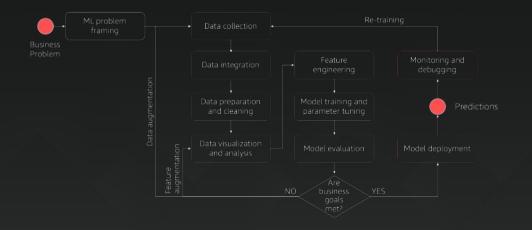


Universal Pictures



## 6 - Iterate, iterate, iterate aka Boyd's Law (1960)

- Start small
- Try the simple things first
- Go to production quickly
- Observe prediction errors
- Act: fix data set?
   Add more data?
   Tweak the algo?
   Try another algo?
- Repeat until accuracy gains become irrelevant
- Move to the next project





### « Does this work? »

Everyone in this room



#### Al and Machine Learning on AWS

10,000+ active customers – all sizes, all verticals

Moud	bluepi	Mobilink	∰ i Franslate	<b>Go</b> Animate	D   DOW JONES	💥 butterfleye	Pinterest	HubSp <b>ò</b> t		STITCH FIX 💿	Zocdoc
BeeLiked SOCIAL POLIANTEM	<b>Open</b> influence	gumgum <sup>a</sup>	viesgo.	<b>∑ SIG</b> OPT	NASA	(ii) twilio	Capital One	<b>⊆</b> Sturdy	<b>Çeal</b> times	SANTILLANA	Artfınder
Heire	duolingo	Vonage	(influential	amazon RADID5	WOLFRAM	Fraud.net	<b>№21CF</b>	FINRA	feedzai	e aculabeloud	<b>Y</b> HY27
FICO	witlee	JRM City		infor	Formula 1	Kelley Blue Book no morno oncome	Brissel-Myers Septible	tinder	ASTRO	sparkiana	advalo
THETAKE		🐝 slack	Zillow	Expedia Group	<b>C</b> elegrae	<u> </u>	RYANAIR	GE Healthcare	O SmartThings'	<b></b> Storybulbs	
> CATHAY PACIFIC	møve	Liberty Mutual.	C-SPAN	TRADESHIFF	aglisk	<b> ⑤OpenAI</b>	Moody's	<b>S</b> Cerner	MARINUS ANALYTICS	American Heart Associations	GO GIRL
RNIB	Caltech	Wizkids	ıntuıt	THORN	mapbox	DigitalGlobe	CLEMSON	<b>€</b> (∻©)M	inhealth <i>care</i>	(A) Aramisauto	Y-CAM®
initiafy	€ FMI		<b>☑</b> TRUSTPILOT	<b>⊚</b> NVIDIA.	zendesk	<b>▶</b> vid <b>mob</b>	KloudGin		bigsquid	CyberAgent.	<b>f</b> reshdesk
echő	PubNub	POPSUGAR	Shutterfly	DAILYLOOK	Z zorroa	articulāte	C. CLAIRE	realtor.com	LAUBROS	fintonic	ENETPULSE
್ GENESYS⁻		<b>vm</b> ware	TINT		clarifai	Lionbridge	SOUP	(FamilySearch	verizon√	b <sup>o</sup> ost.ai	CONCAT
	Limbik	WĀRTSII Ā	BUILD	Search Blox	igrammarly	ONEHOUR PAASLATION	Symaps.		tu Simple		RedAwring



## https://ml.aws

Julien Simon Global Technical Evangelist, Al & Machine Learning Amazon Web Services

@julsimon

https://medium.com/@julsimon

