




# Deep Water: Best Open-Source Deep Learning

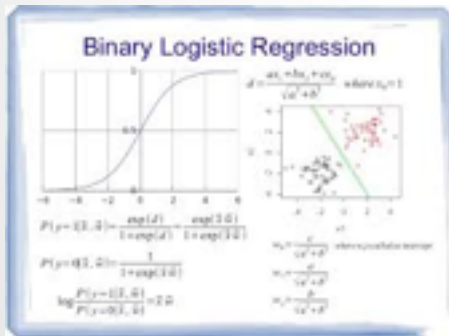
## Enterprise Deep Learning for Business Transformation

Deep Water = THE Deep Learning Platform	H2O integrates the top open-source DL tools	
Native GPU support	 is up to 100x faster than	
Enterprise Ready	Easy to train and deploy, interactive, scalable, etc. Flow, R, Python, Spark/Scala, Java, REST, POJO, <b>Steam</b>	
New Big Data Use Cases (previously impossible or difficult in H2O)	<b>Image</b> - social media, manufacturing, healthcare, ... <b>Video</b> - UX/UI, security, automotive, social media, ... <b>Sound</b> - automotive, security, call centers, healthcare, ... <b>Text</b> - NLP, sentiment, security, finance, fraud, ... <b>Time Series</b> - security, IoT, finance, e-commerce, ...	

# More Data is Better! — Images, Video, Text, Logs, Streams, ...

Example:  
Fraud  
Prediction

Item ID	Description	Brand	Category	Size	Unit	Starting Qty	Starting Status	WH 1 Qty	WH 1 Cost	WH 2 Qty	WH 2 Cost	WH 3 Qty	WH 3 Cost
48000	TURKEY SALAD 3.00	Ben & Keith	PRODUCE	3.00	oz	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
48000	CHICKEN CASSEROLE	Ben & Keith	PRODUCE	3.00	oz	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
77000	WARMING LIGHT BULB	Ben & Keith	PRODUCE	3.00	oz	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
81000	LEMON SOURCES	Ben & Keith	PRODUCE	3.00	oz	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
84000	LEMON SOURCES	Ben & Keith	PRODUCE	3.00	oz	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
86000	CUP FOAM 160Z JARS	Ben & Keith	PRODUCE	3.00	oz	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
71000	KARMA	Ben & Keith	PRODUCE	3.00	oz	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
44000	Sealed Prepared	Ben & Keith	PRODUCE	3.00	oz	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
70000	GREEN PARSNIP/SWED	Ben & Keith	PRODUCE	3.00	oz	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
25000	SOO FRESH SHELL MED BROWN	Ben & Keith	PRODUCE	3.00	oz	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
44000	VINOGR APP CORN-BROWN	Ben & Keith	PRODUCE	3.00	oz	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
28000	LEAF 12-CT	Ben & Keith	PRODUCE	3.00	oz	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
80000	TOMATO DICED-WOEN CHIPS	Ben & Keith	PRODUCE	3.00	oz	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
28000	Ice Cream Vanilla 1/2 Gal	Ben & Keith	PRODUCE	3.00	oz	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
40000	KITCHEN FRESH 1/2 GAL	Ben & Keith	PRODUCE	3.00	oz	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
14000	Sealed Under 160Z BARS BUTTER	Ben & Keith	PRODUCE	3.00	oz	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
71000	CRUSTON SEASONED HONEYDEW	Ben & Keith	PRODUCE	3.00	oz	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
44000	Sauce 1/2 GALANA MED HOT	Ben & Keith	PRODUCE	3.00	oz	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
13000	Green Green Bellini 160Z	Ben & Keith	PRODUCE	3.00	oz	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
70000	Yogurt 160Z Lactaid 1/2 GAL	Ben & Keith	PRODUCE	3.00	oz	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
13000	Green Yellow Jumbo	Ben & Keith	PRODUCE	3.00	oz	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
71000	Maple Red Coughed	Ben & Keith	PRODUCE	3.00	oz	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
20000	TUMBLER 20 OZ JARBER	Ben & Keith	PRODUCE	3.00	oz	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00

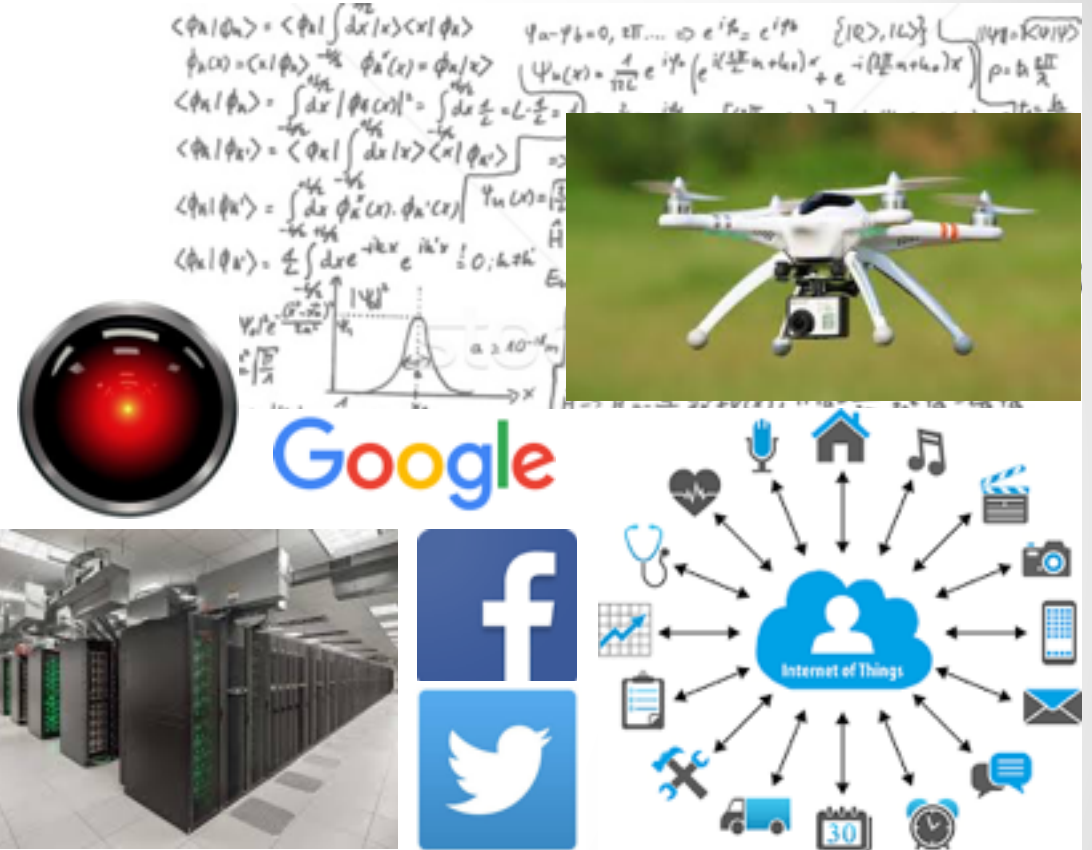


Today



Tomorrow

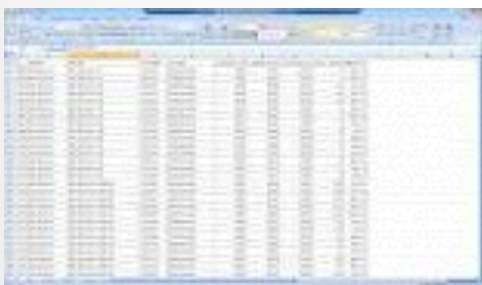
Better Data — Better Models — Better Results



# Deep Water opens the Floodgates for state-of-the-art Deep Learning

## H2O Deep Learning: simple multi-layer neural networks

1-5 layers  
MBs/GBs of data

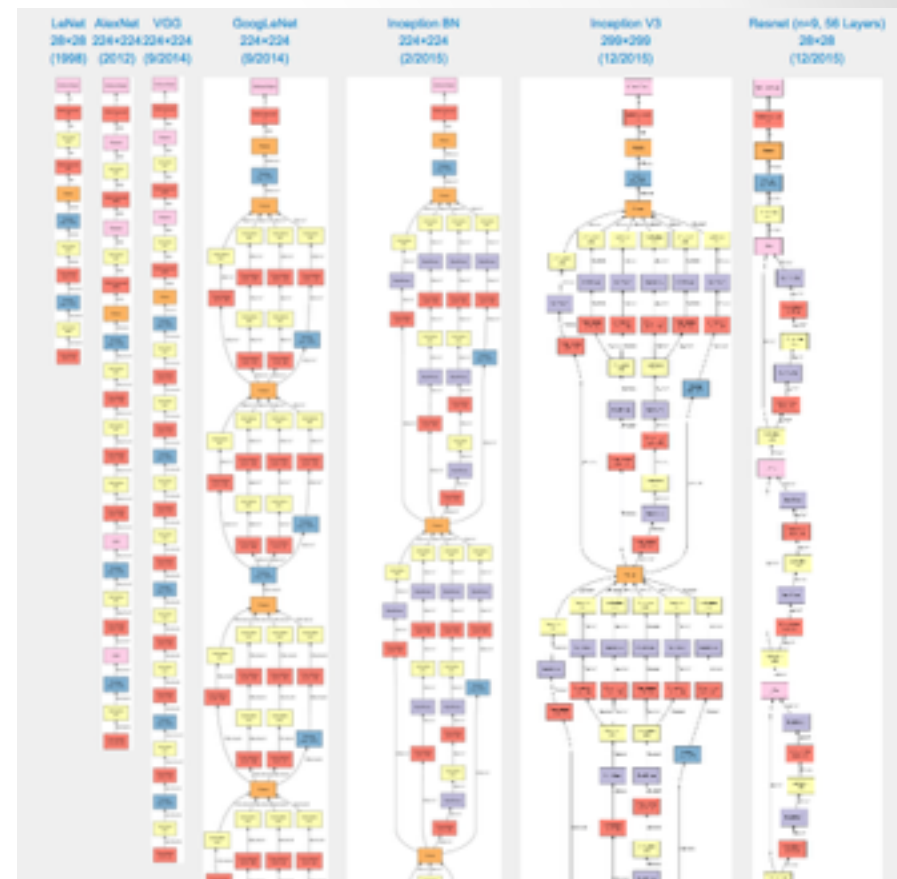
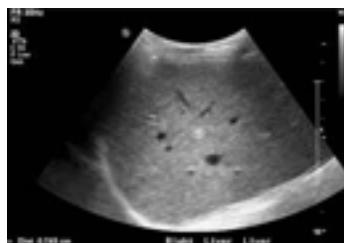


Limited to business analytics,  
statistical models (CSV data)

H<sub>2</sub>O.ai

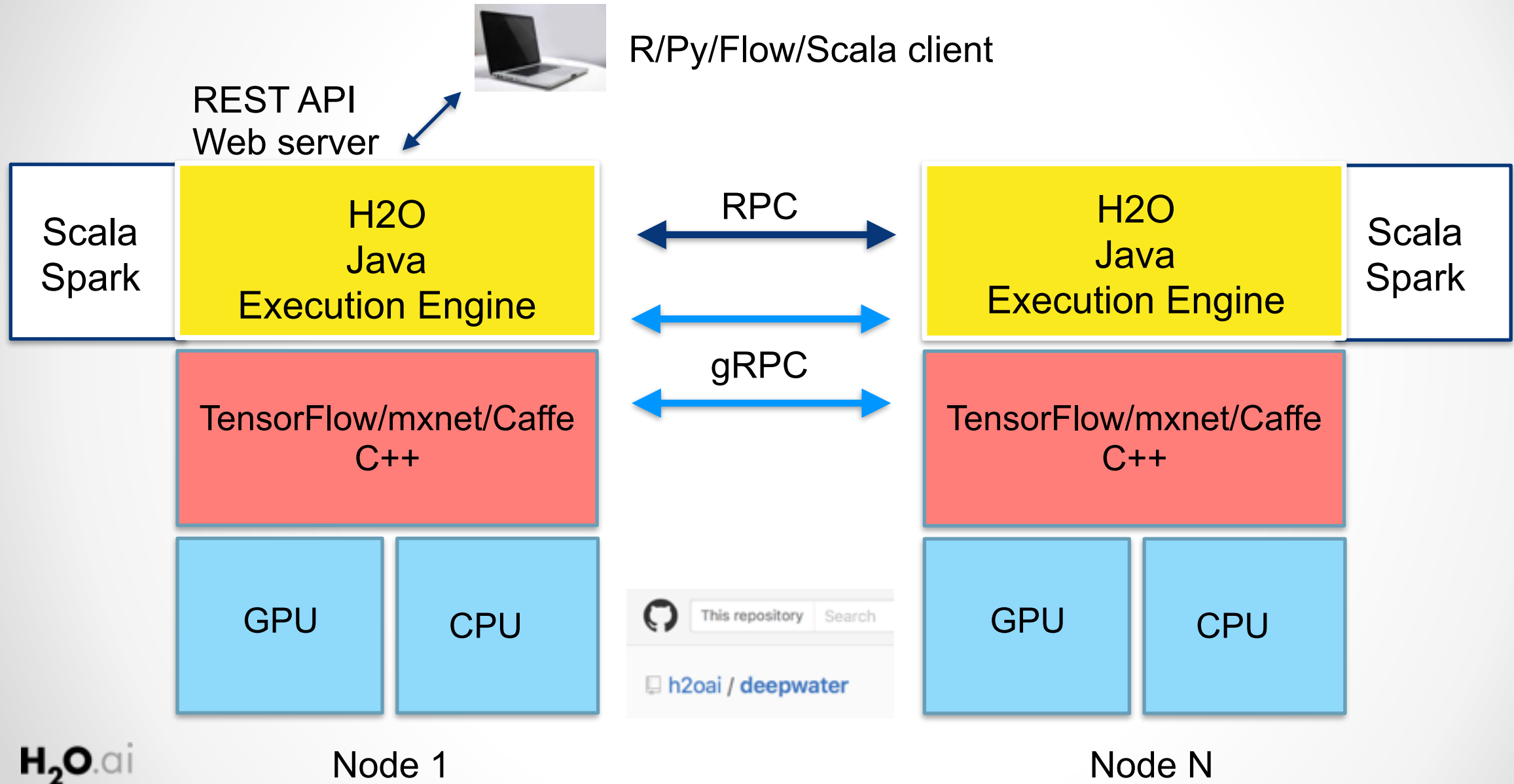
## Deep Water: deep complex networks

5-1000 layers  
GBs/TBs of data



Large networks for big data  
(e.g. image 1000x1000x3 -> 3m inputs)

# Deep Water Architecture





# Demo: GPU Image Classification from Flow!



predictions out

Google's  
"Inception-BN"  
network  
architecture:  
152 layers

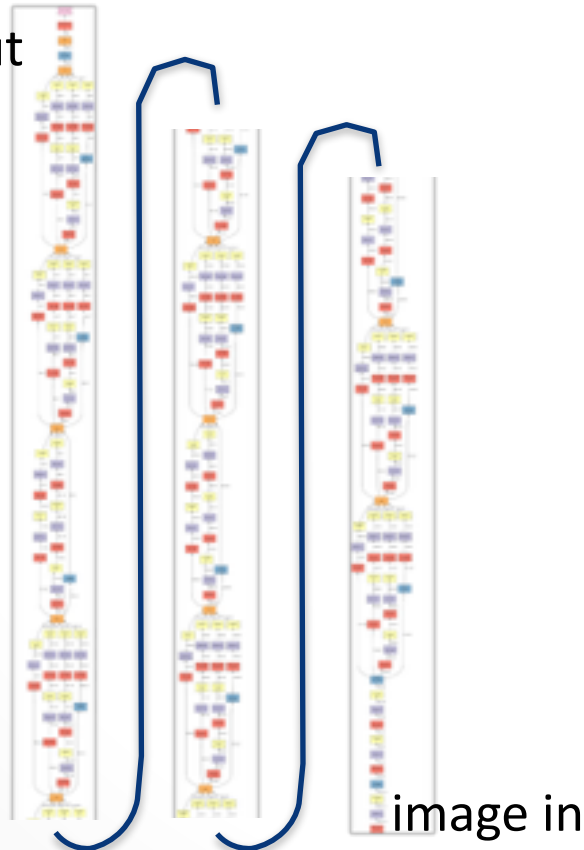


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