


Gainesville Python Ninjas


March 24 2019



Agenda

- Refreshments 
- Introductions
- Coding Challenge
- Deep Learning To Hack Lottery
- Showcase Your App
- Fin

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Coding Challenge

<https://practice.geeksforgeeks.org/problems/arraylist-operation/1>

Agenda

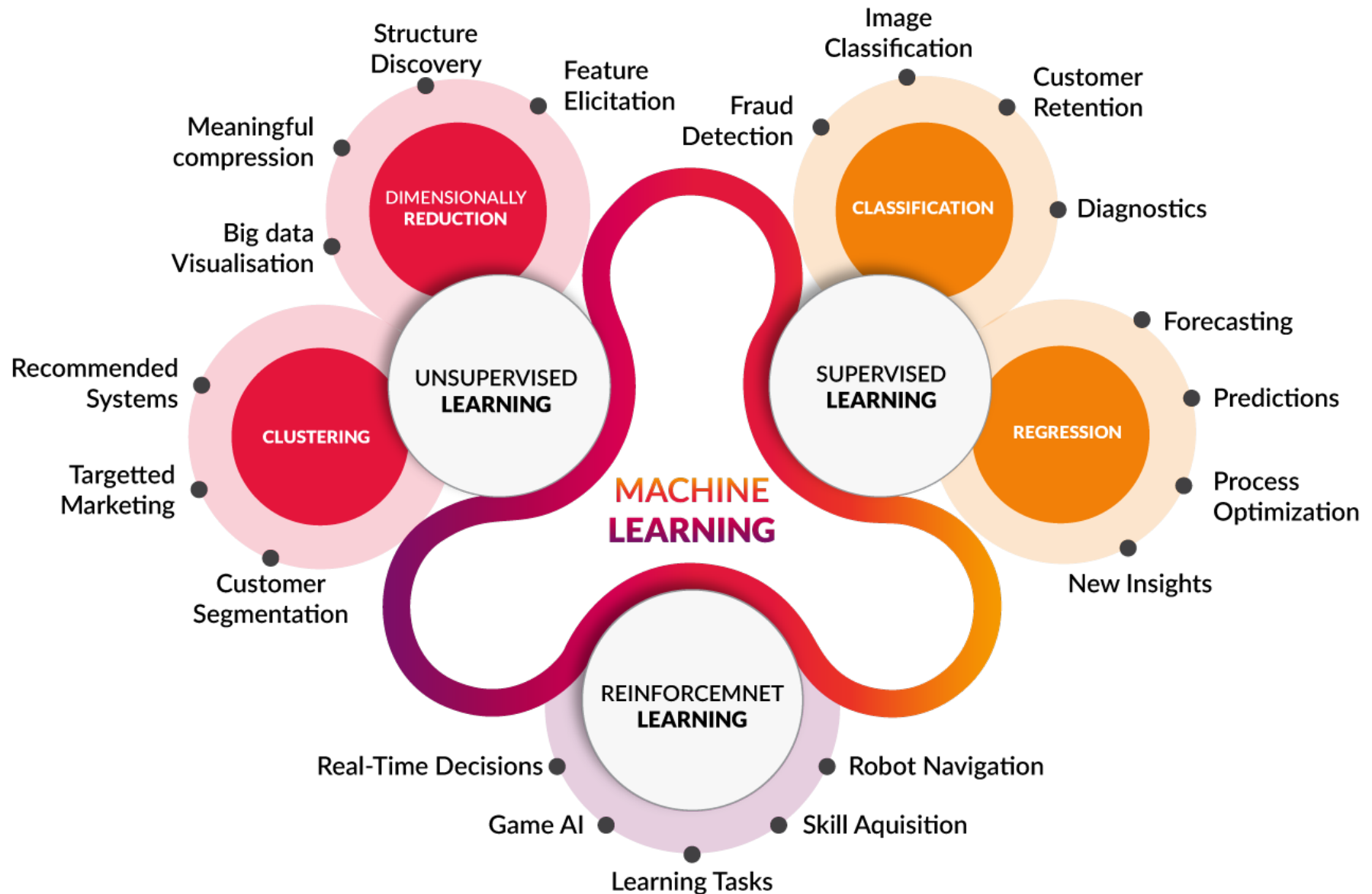
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Deep Learning Hack the Lottery

- Intro to Machine Learning
- What is Deep Learning?
- Lottery Target
- Methodology
 - Extracting Data
 - Program
 - **With Regular Statistics**
 - **With Keras Deep Learning**
- Analysis

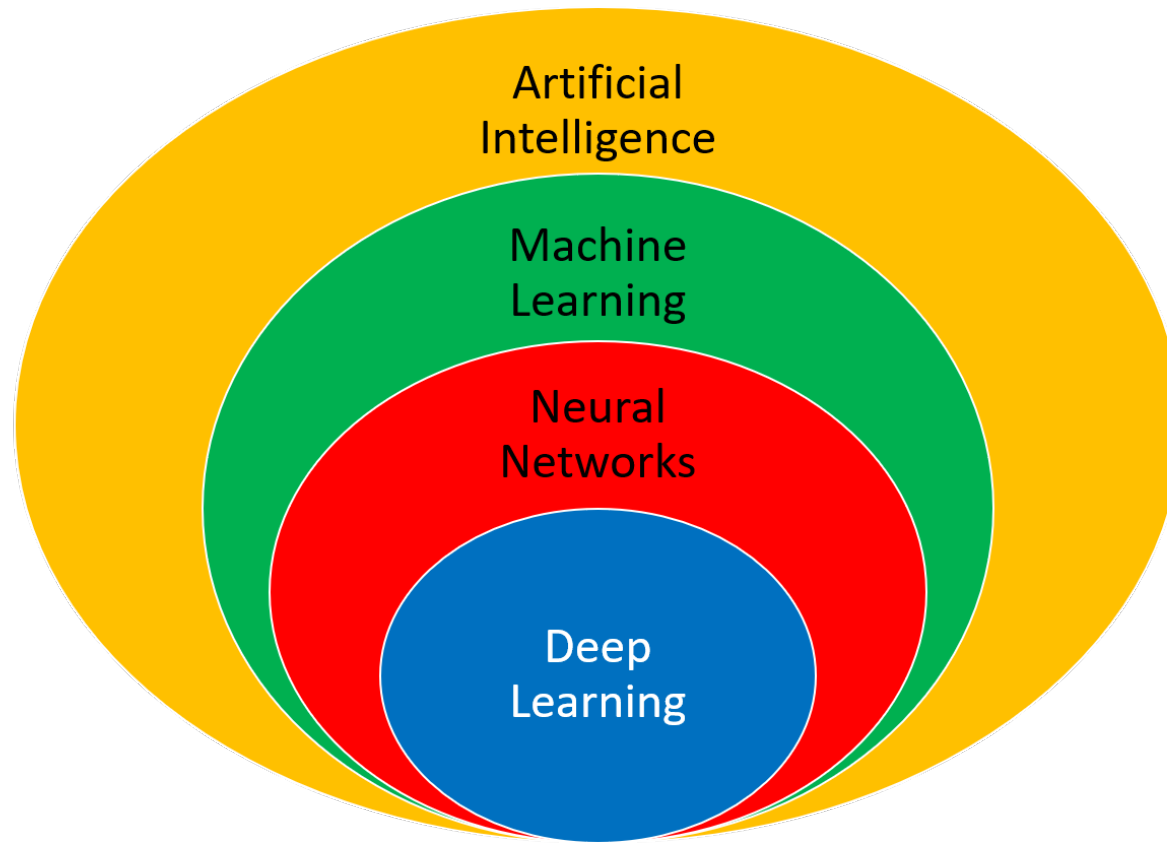
Deep Learning Hack the Lottery:

Intro To Machine Learning



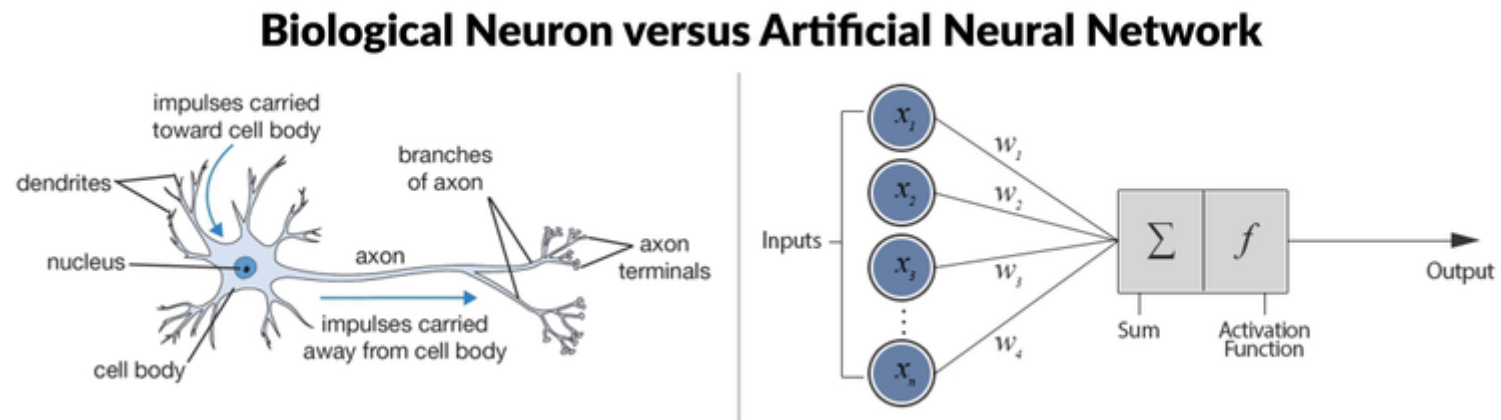
Deep Learning Hack the Lottery:

What is Deep Learning?



Deep Learning Hack the Lottery:

What is Deep Learning?



- x_n represents the numeric input value originating from other neurons
- w_n represents the real numeric weight of an input
- Σ represents the weighted sum = $x_1 * w_1 + x_2 * w_2 + \dots x_n * w_n$
- **Activation function** = $f(\Sigma)$

Example:

$$f(\Sigma) = 0 \text{ if } \Sigma < 0$$

$$f(\Sigma) = 0.5 \text{ if } \Sigma = 0$$

$$f(\Sigma) = 1 \text{ if } \Sigma > 0$$

Deep Learning Hack the Lottery: Lottery Target



LUCKY MONEY™

Winning Numbers:
Tuesday, January 29, 2019

7 11 31 35 3

GAME ENDED

2 Winners in: Miami, Milton

PRIZE LEVEL	WINNERS	PRIZE AMOUNT
4-of-4 + LB	2	\$1.8 Million
4-of-4	3	\$2,167.50
3-of-4 + LB	57	\$250.00
3-of-4	861	\$48.50
2-of-4 + LB	1,548	\$19.00
1-of-4 + LB	13,346	\$2.50
2-of-4	25,365	\$2.00
0-of-4 + LB	31,703	Free Ticket

Search Lucky Money

Search By:
Date ▾

Select a Date (mm/dd/yyyy)

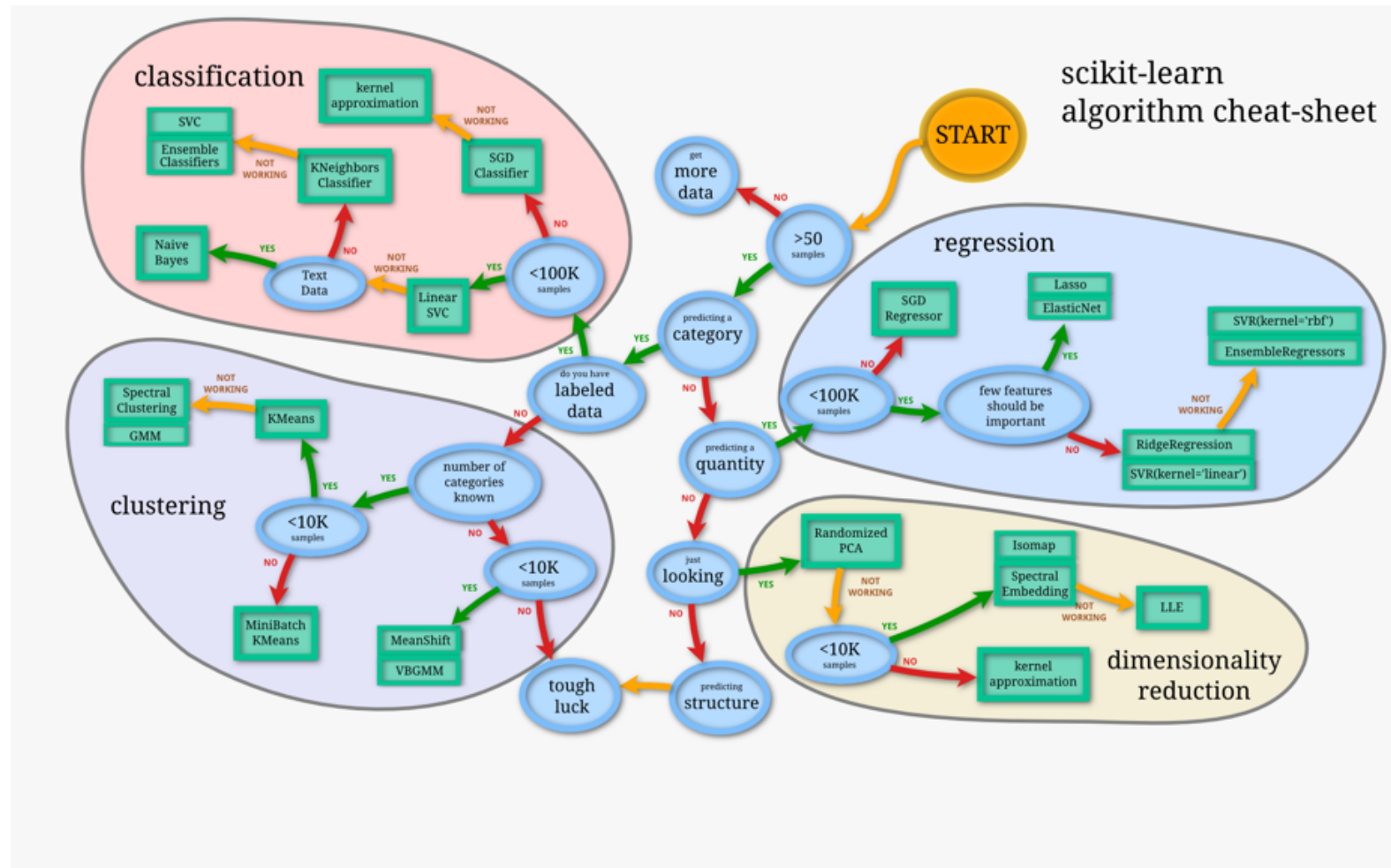
Winning Number History
[HTML](#) | [PDF](#)

Jackpot Winners & Retailer Information [PDF](#)

ARE YOU A WINNER?
All Draw game prizes must be claimed at a Florida Lottery retailer or Florida Lottery office on or before the 180th day after the winning drawing.

How to Claim >

Deep Learning Hack the Lottery: Methodology: **Overview**



Deep Learning Hack the Lottery: Methodology: **Data Extraction**

The Data was extracted from here:

<http://www.flalottery.com/reports>

FLORIDA Lottery

Where to Play How to Claim About Us Events Media FAQs Contact Us

PLAY WIN SECOND CHANCE SUPPORT EDUCATION FOR RETAILERS

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- FAQs
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- Security
- Open Government
- Integrity
- Inspector General
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REPORTS

The following Florida Lottery information is available for public review.
You may download the FREE [Adobe Acrobat Reader](#) to view files in PDF format.

DOCUMENT TITLE	FORMAT
POWERBALL®	
Winning Numbers (2009 - present)	HTML or PDF
Jackpot Winners & Retailer Information	PDF
Odds Calculation	PDF
Top 10 Jackpots of All Time and Top 10 Jackpots Since Florida Joined	PDF
Official Florida Lottery Powerball Game Rules	PDF
MUSL Powerball Game Rules	PDF
MEGA MILLIONS®	
Winning Numbers (May 2013 - present)	HTML or PDF
Jackpot Winners & Retailer Information	PDF
Odds Calculation	PDF
Top 10 Jackpots of All Time and Top 5 Jackpots Since Florida Joined	PDF
Official Florida Lottery Mega Millions Game Rules	PDF
MUSL Mega Millions Game Rules	PDF
FLORIDA LOTTO®	
Winning Numbers, Complete History	HTML or PDF
Jackpot Winners & Retailer Information (Dec. 2009 - present)	PDF
Jackpot Winners & Retailer Information (May 1988 - Nov. 2009)	PDF
Numbers Frequency Chart	HTML or PDF
2019 Payouts	PDF
2018 Payouts	PDF
2017 Payouts	PDF
Machine & Ball Sets	PDF

Deep Learning Hack the Lottery: Program: **With Regular Statistics**

See PyCharm

Deep Learning Hack the Lottery: Program: **With Keras Deep Learning**


See PyCharm

Deep Learning Hack the Lottery:

Sources

- 1) <https://www.datacamp.com/community/tutorials/deep-learning-python>
- 2) <http://apmonitor.com/do/index.php/Main/DeepLearning>
- 3) <http://www.coli.uni-saarland.de/~crocker/Teaching/Connectionist/fksummary.pdf>
- 4) <https://machinelearningmastery.com/a-tour-of-machine-learning-algorithms/>

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Showcase Your App

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