SURVEY ON AI FRAMEWORKS

DEC 2022

CONTENT

- AI Framework Briefly
  - Status on github
  - TF 2.0
  - PyTorch 2.0

- Universities in this area

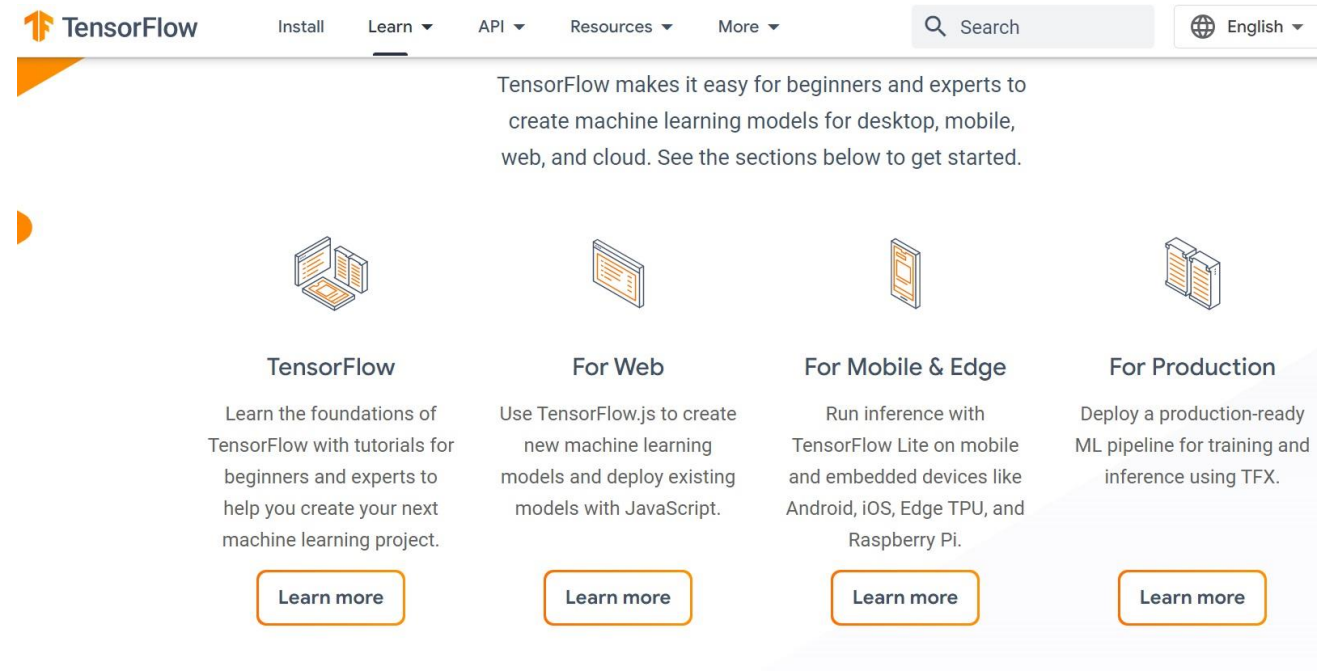# AI FRAMEWORKS AT-A-GLANCE

Data cited on Dec 7 2022

Rank	Framework	Commits	Fork	Star	Contributors
1	TensorFlow	139,816	87.5k	170k	3242
2	PyTorch	54,566	60.8k	16.9k	2566
3	Theano (stopped dev)	28,127	2.5k	9.6k	351
4	CNTK (last release Apr26 2019)	16,117	4.4k	17.3k	200
5	MXNET	11,893	6.9k	20.2k	874

TENSORFLOW 2.0

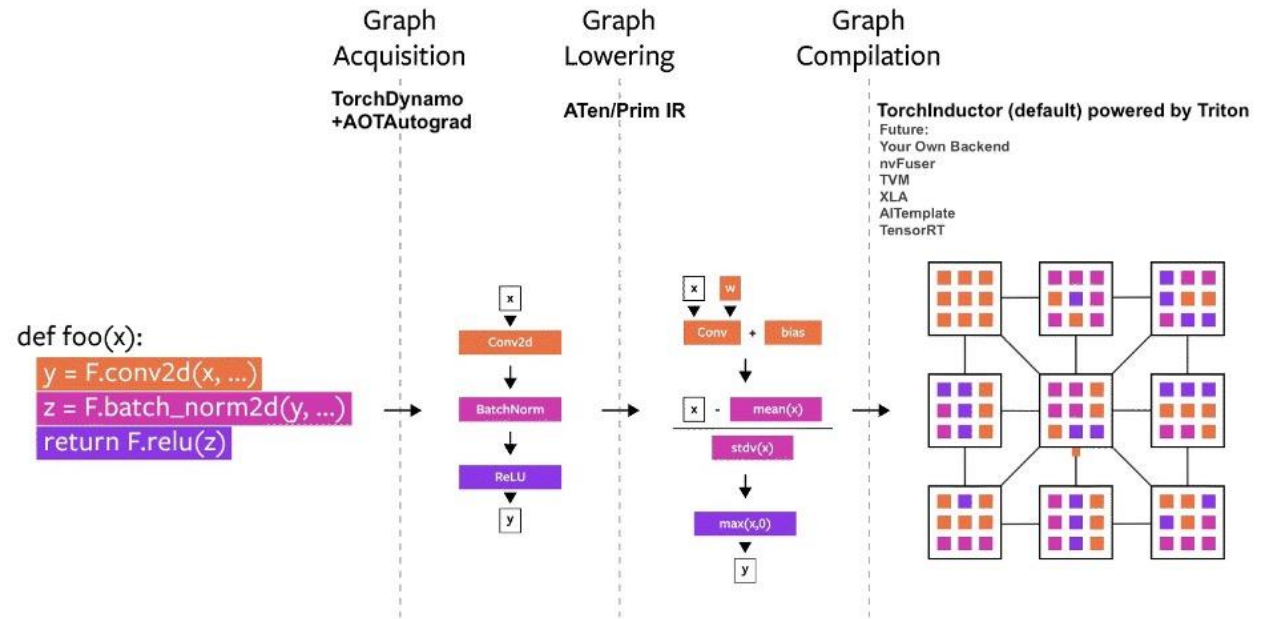Most recent release: TF2.11 on Nov 2022

- More industry friendly
- More active in eco system
- Easier to deploy and serve

PYTORCH 2.0 (RELEASED ON DEC 2022)

PYTORCH 2.X: FASTER, MORE PYTHONIC AND AS DYNAMIC AS EVER

- More user in academies
- Easier to use
- Growing user group

TOP UNIVERSITIES IN THIS AREA

➢ University of Montreal (where Theano started)

➢ UC Berkeley (where Caffe developed)

➢ CMU (co-author of MXNET)

➢ UW(Seattle) (co-author of MXNET)

UNIVERSITY OF MONTREAL

Leader； Yoshua Bengio
   https://yoshuabengio.org/
   https://mila.quebec/en/

Prof in Graph NN:
   Jian Tang : https://mila.quebec/en/person/jian-tang/

UC BERKELEY

The Berkeley Artificial Intelligence Research (BAIR) Lab

https://bair.berkeley.edu/faculty.html

Prof in framework:
    Bin Yu: https://binyu.stat.berkeley.edu/

UCB RISE LAB:
    REAL-TIME INTELLIGENT SECURE EXPLAINABLE SYSTEMS

https://rise.cs.berkeley.edu/
https://rise.cs.berkeley.edu/people/

CMU

Carnegie Mellon University
Computer Science Department

Carnegie Mellon University
School of Computer Science

ML Machine Learning Department

TVM major contributor:

Chen Tianqi: https://tqchen.com/

WASHINGTON UNIVERSITY (SEATTLE)

sampl   http://sampl.cs.washington.edu/

UW Mode Lab   http://mode.cs.washington.edu/

Prof **Arvind Krishnamurthy**
 https://www.cs.washington.edu/people/faculty/arvind
Prof **Luis Ceze**
https://homes.cs.washington.edu/~luisceze/

STANFORD UNIVERSITY

AI Lab:

https://cs.stanford.edu/research/ai

Computer System Lab:

https://cs.stanford.edu/research/computer-systems

Prof **CARLOS GUESTRIN**
https://guestrin.su.domains/

REFERENCES

- https://github.com/tensorflow/tensorflow

- https://github.com/pytorch/pytorch

- https://github.com/microsoft/CNTK

- https://github.com/Theano/Theano

- https://github.com/apache/mxnet

- https://mila.quebec/en/

- https://bair.berkeley.edu/faculty.html

- https://rise.cs.berkeley.edu/

- https://www.ml.cmu.edu/

- http://sampl.cs.washington.edu/

- http://mode.cs.washington.edu/

THANK YOU