

# Project Promotion Proposal: Angel as an LF AI Graduate Level Project

**Fitz Wang**

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# Project Contribution Proposal Review & Discussion: Angel

Contributed by: Tencent in August 2018 as Incubation project

Presenter: Fitz Wang

Resources: <https://github.com/Angel-ML/angel>

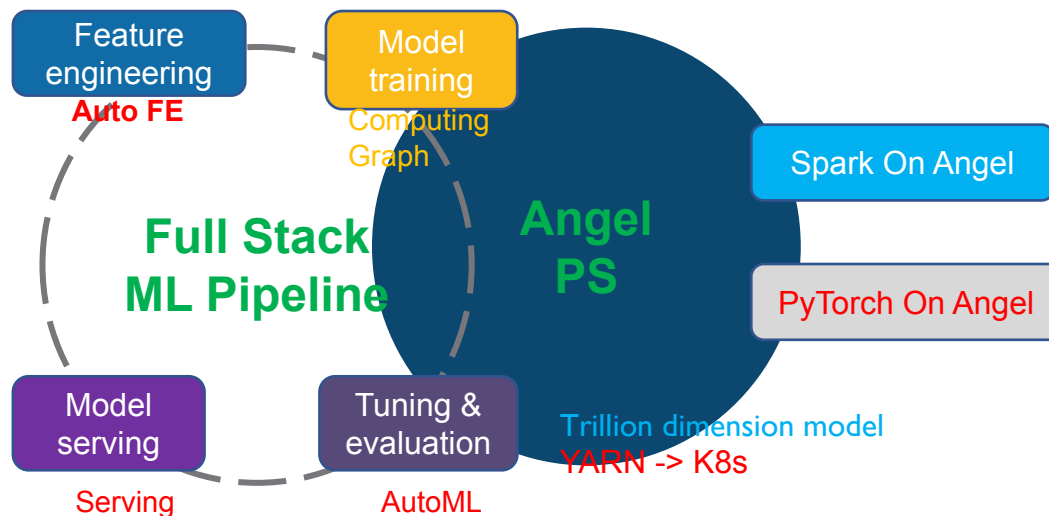
Proposal: Promote Angel from Incubation to Graduation

# Angel and its evolution

- Angel is a distributed machine learning platform based on parameter server. It has been open source since July, 2017, and joined LFAI at September, 2018. Angel initial focus on sparse data and big models training, However, after join LFAI, it becomes a full stack machine learning platform, which includes feature engineering, model training, hyper-parameter tuning and model serving.

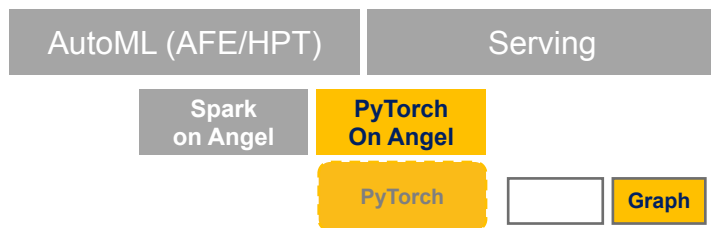
# Feature/Functionality evolution (2/2)

- From **model training** to **full stack machine learning platform**
  - model training: only concern the training part
  - full stack machine learning platform, including :



# Feature/Functionality evolution (1/2)

- From machine learning to graph computing
  - Serval graph algorithms are implemented on Angel, such as Fast Unfolding, LINE and Word2Vec.
  - PyTorch on Angel is release to support graph convolution neural network (GCN)



## Graph algorithms:

- Word2Vec
- LINE
- KCore
- Louvain
- GCN

<https://github.com/Angel-ML/sona>

<https://github.com/Angel-ML/PyTorch-On-Angel/blob/master/docs/graph.md>

# Community evolution (1/4)

## Current status

### • 7 Sub Projects

- math2/format/mlcore
- Angel
- Serving
- SONA (Spark ON Angel)
- PyTorch On Angel

• 250K+ lines of java code

• 50K+ lines of scala code

• 400+ Issues:

- Open: 111
- Closed: 300

• ~400 Pull Requests

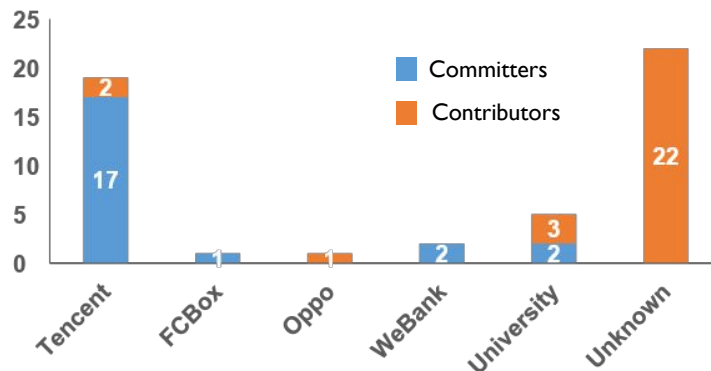
- Open: 1
- Closed: 395

• 2300+ Commits

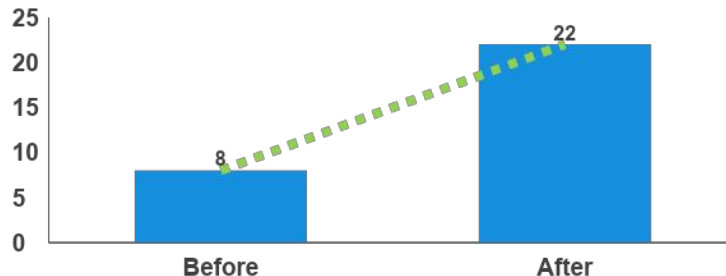
• 22 Committers

• 50 Contributors

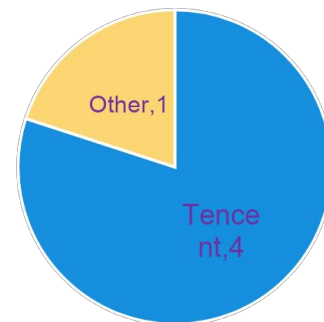
Contributors & Committers



Committers Increase After Join LFAI



TSC Member

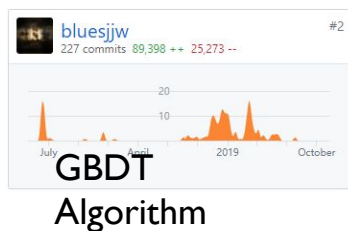


TSC: decide road map, new features, monitor progress; voting to approve new TSC/Committer; one meeting per month

Committer: code review, merge/approve PR (2 together)

# Community evolution (2/4)

- Part of Contributors outside Tencent

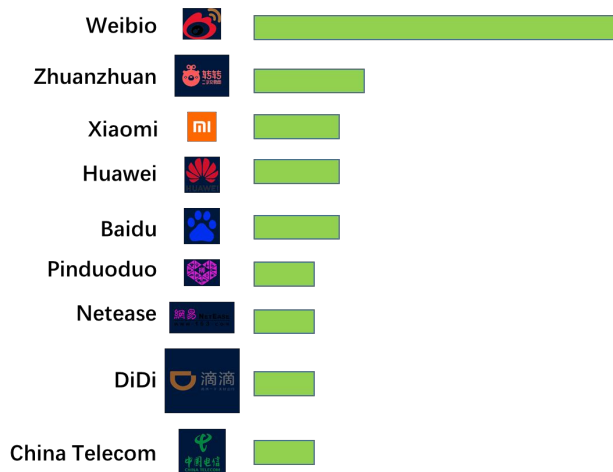


# Community evolution (3/4)

## • Users Outside Tencent



More than 100 companies or institutions use Angel in their products or inner system





# Community evolution (4/4)

- Angel On Boarding Acumos
  - On-board java model
  - On-boarding Dockerized model

# Outreach and LFAI Events

- GITC 2019: Nanjing, talk about Angel 2.0
- OSSNA 2019: San Diego, release Angel 3.0, talk, Booth
- LFAI Open Day
  - 21-08-2019, San Diego, release Angel 3.0
  - 17-09-2019, Shanghai, talk about PyTorch on Angel
- Angel Meetup (13-10-2019)
- Tencent Techo 2019: 06-11-2019, talk about graph computing

# Outreach and LFAI Events

GITC, 2019



LFAI Open Day, Shanghai



## Agenda

- What is GNES?
- Breakdown: Neural, Elastic and Search
- GNES design principles and tech highlights
- Demo
- Summary

OSSNA 2019, Booth



Angel Meetup, 2019



LFAI Open Day, San Diego

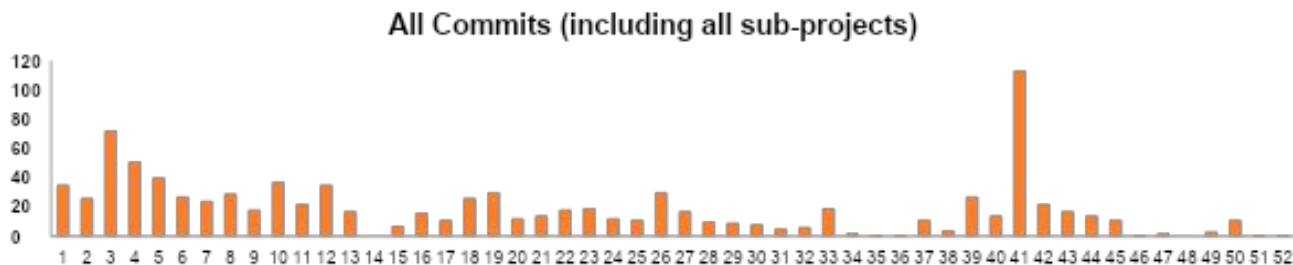


Techo, 2019



# Others

- Angel Has achieved and maintained a Core Infrastructure Initiative Best Practices Badge
- Ongoing Commits and Merged Contributions



# Feature Roadmap for 2020

- Release 2 version: 3.2, 3.3
- Version 3.2 is more about Graph Computing, add more algorithm:
  - Traditional graph algorithms: Closeness, HyperANF,...
  - Graph Embedding algorithms: Node2Vec, DeepWalk
  - Graph neural network: GraphSAGE
- Version 3.3 is more about federated learning

# Outreach Plans For 2020

- We will release the major version at LFAI Event, such as LFAI Open Day or colocation conference
- Angel Team will participate all LFAI event that hold in China to promote and cooperate with other LFAI projects
- Angel will hold 4 meetups in Shenzhen, Shanghai, Beijing and Chengdu respectively

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