

PAKDD 2019: the 4th AutoML Challenge

AutoML for Lifelong Machine Learning

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Schedule

14:10 ~ 14:25

Overview and Award Ceremony

14:25 ~ 14:35

4th Place Solution Presentation

14:35 ~ 14:45

3rd Place Solution Presentation

14:45 ~ 14:55

2nd Place Solution Presentation

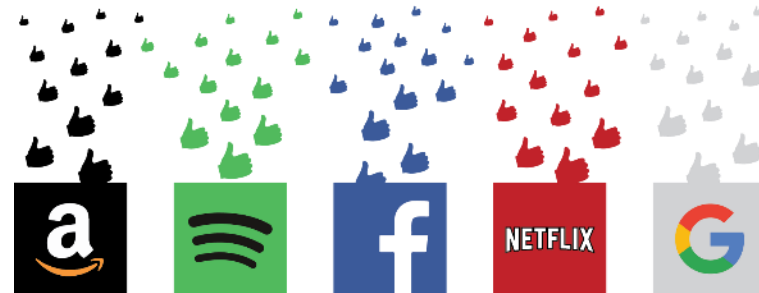
14:55 ~ 15:05

1st Place Solution Presentation

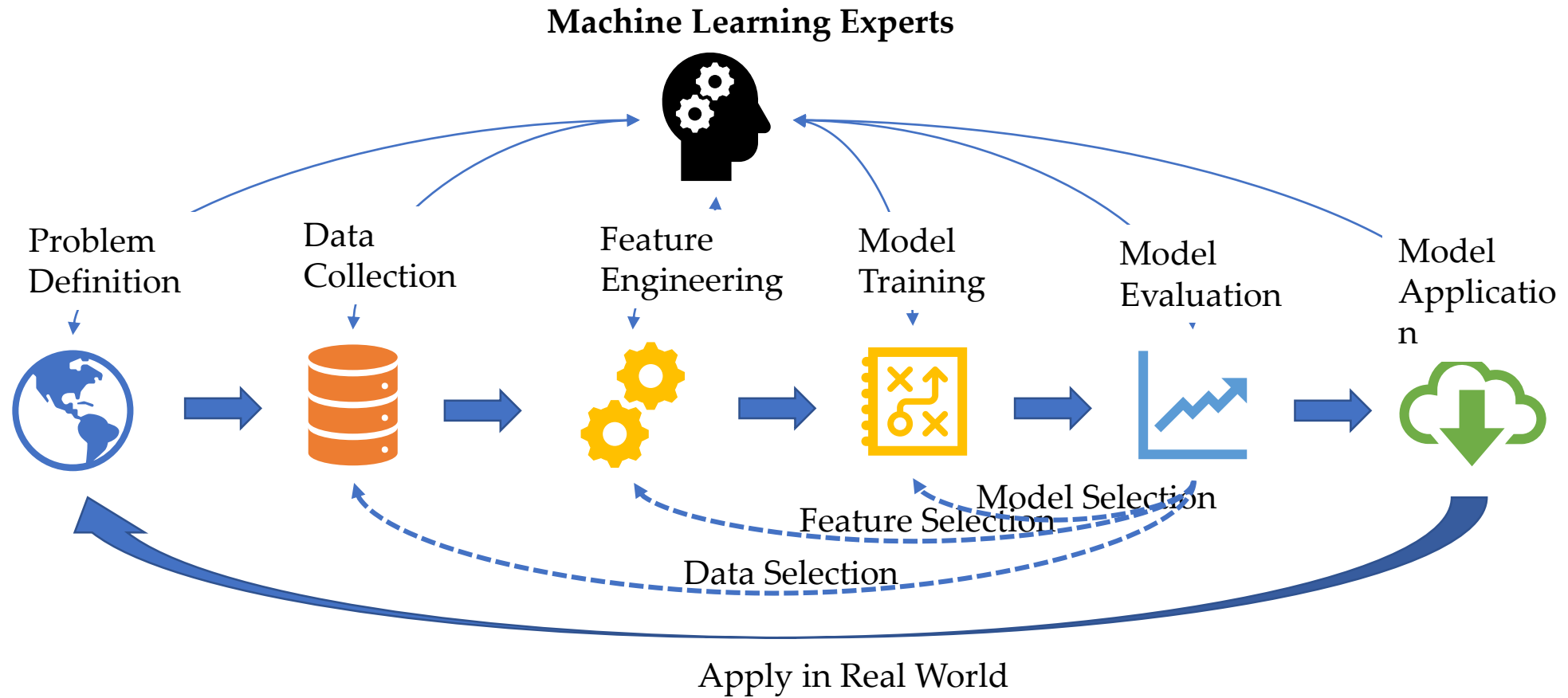
15:05 ~ 15:10

Photo Time

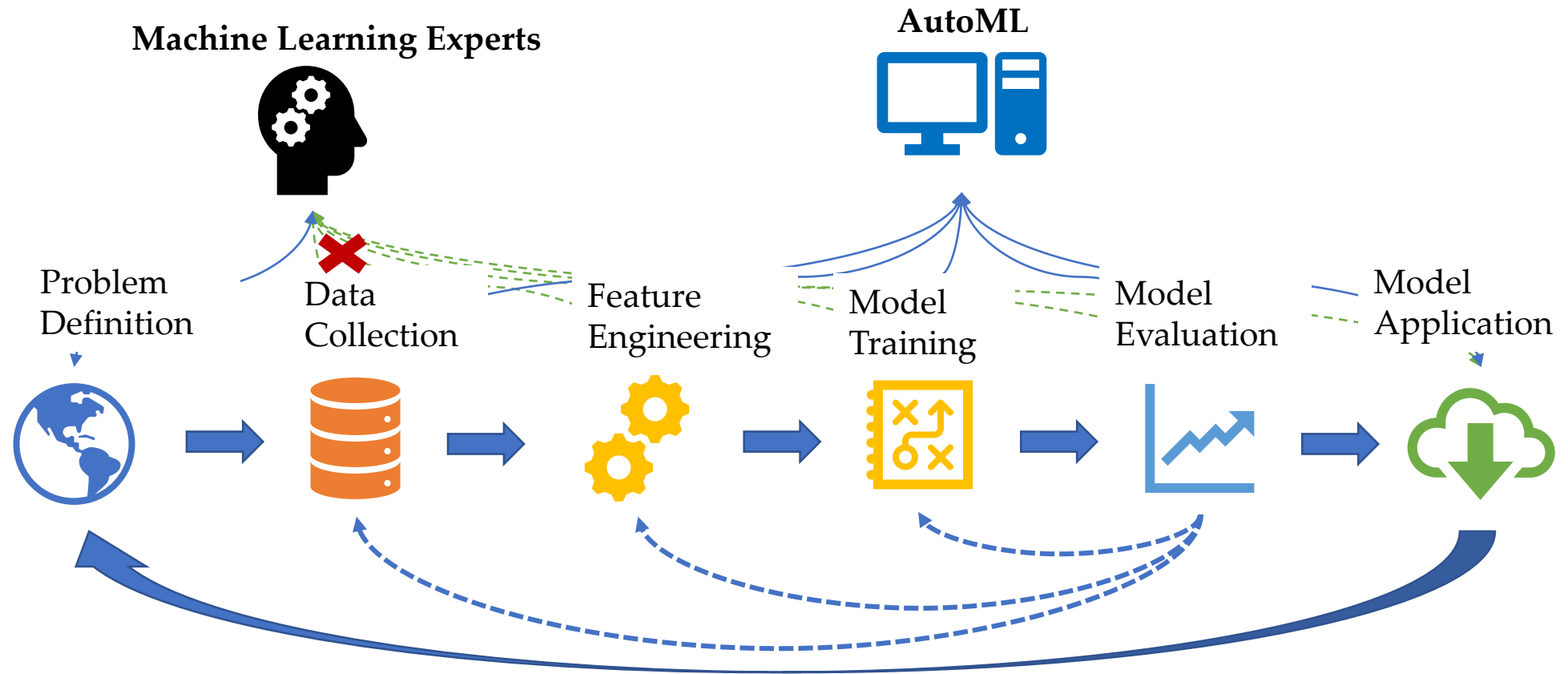
Machine Learning Applications



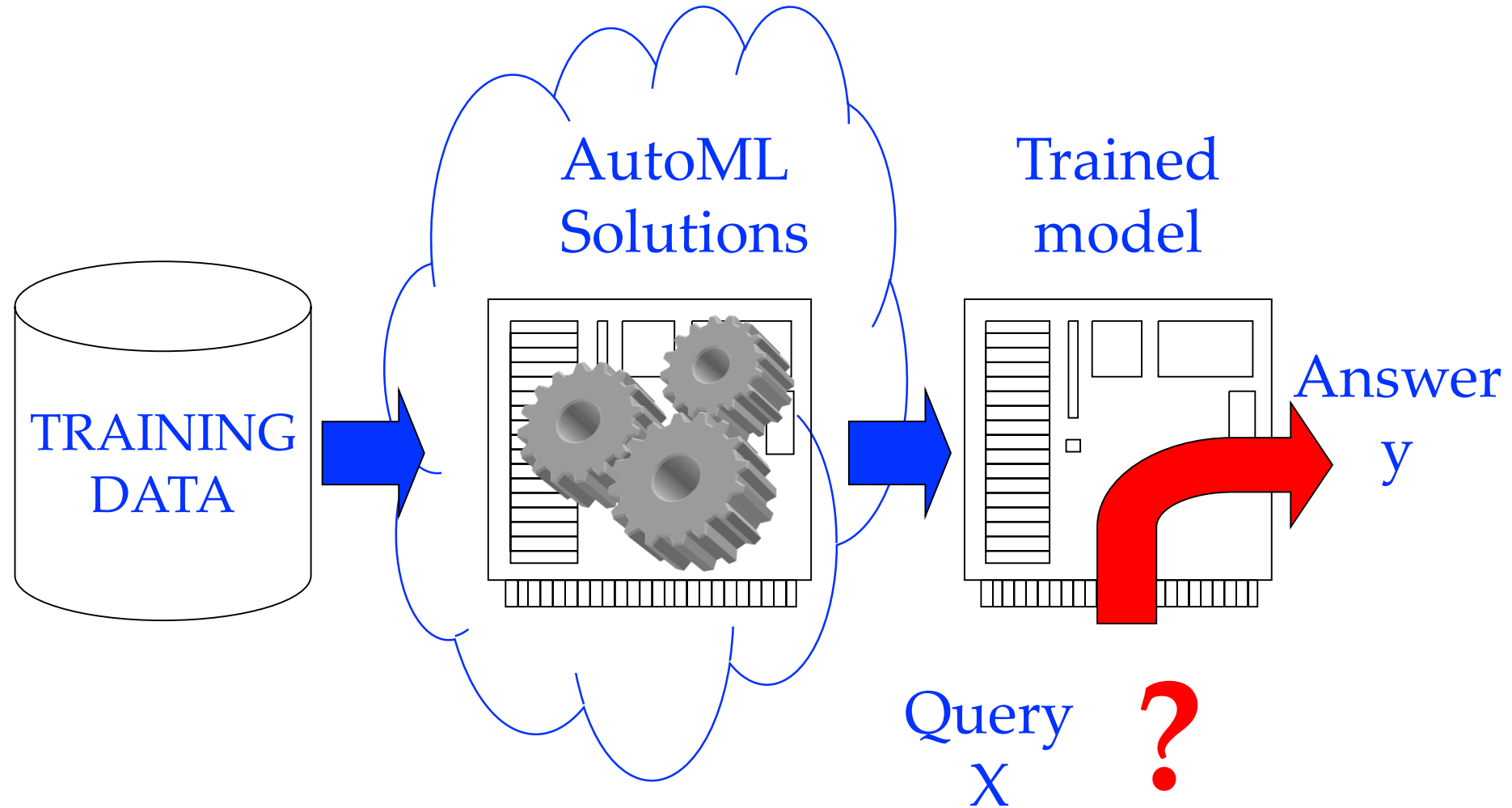
Challenges in Real World Applications



Solution: AutoML



The AutoML Challenges



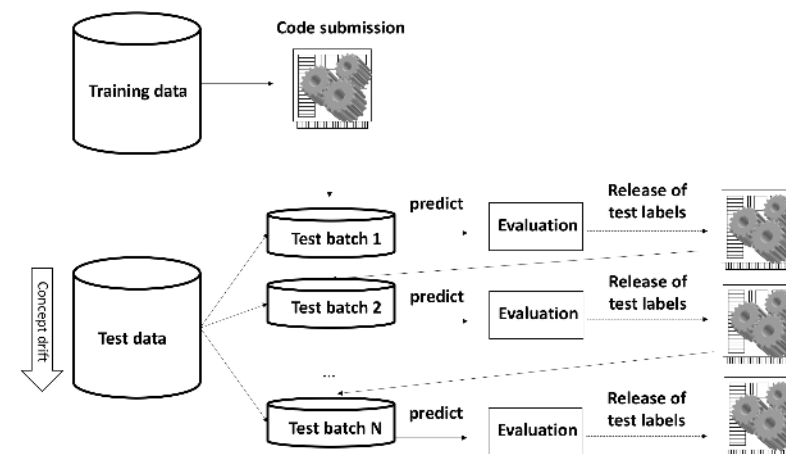
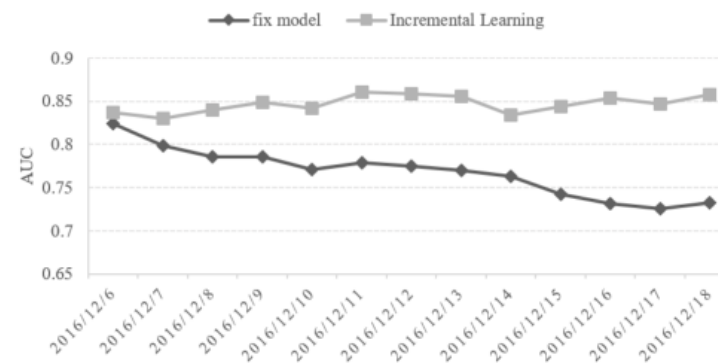
Brief History of AutoML Challenges

Competition	Year	Lasts	Collocated Events	#Participants	Prizes	Providers & Sponsors
AutoML1	2015-2016	2 Years	NIPS, ICML, IJCNN	600+	30,000 USD	Microsoft and ChaLearn
AutoML2	2018	4 Months	PAKDD 2018	250+	10,000 USD	4Paradigm and ChaLearn
AutoML3	2018	3 Months	NeurIPS 2018	300+	15,000 USD	4Paradigm, Microsoft and ChaLearn
AutoML4 (AutoML3+)	2019	3 Months	PAKDD 2019	130+ Teams	6,500 USD	4Paradigm, ChaLearn, Microsoft and Amazon
AutoML5	2019	3 Months Ongoing!	KDD Cup 2019	~500 Teams (growing)	33,500 USD	4Paradigm, ChaLearn, Microsoft and Amazon
AutoML6 (AutoCV)	2019	Coming Soon			10,000 USD	ChaLearn, 4Paradigm and Google
AutoML7 (AutoDL)	2019	Coming Soon	NeurIPS 2019		15,000 USD	ChaLearn, 4Paradigm and Google

AutoML4 at PAKDD 2019

- A rematch of AutoML3 @ NeurIPS 2018
- AutoML challenged by:
 - **Scalability.** Data sets larger than ever will be considered (Up to 10M instances)
 - **Concept drift.** Dependency between instances, concept changing through time.
 - **LifeLong setting.** Evaluation of the lifelong capabilities of learning machines.

COMPARASION OF DIFFERENT STRATEGIES

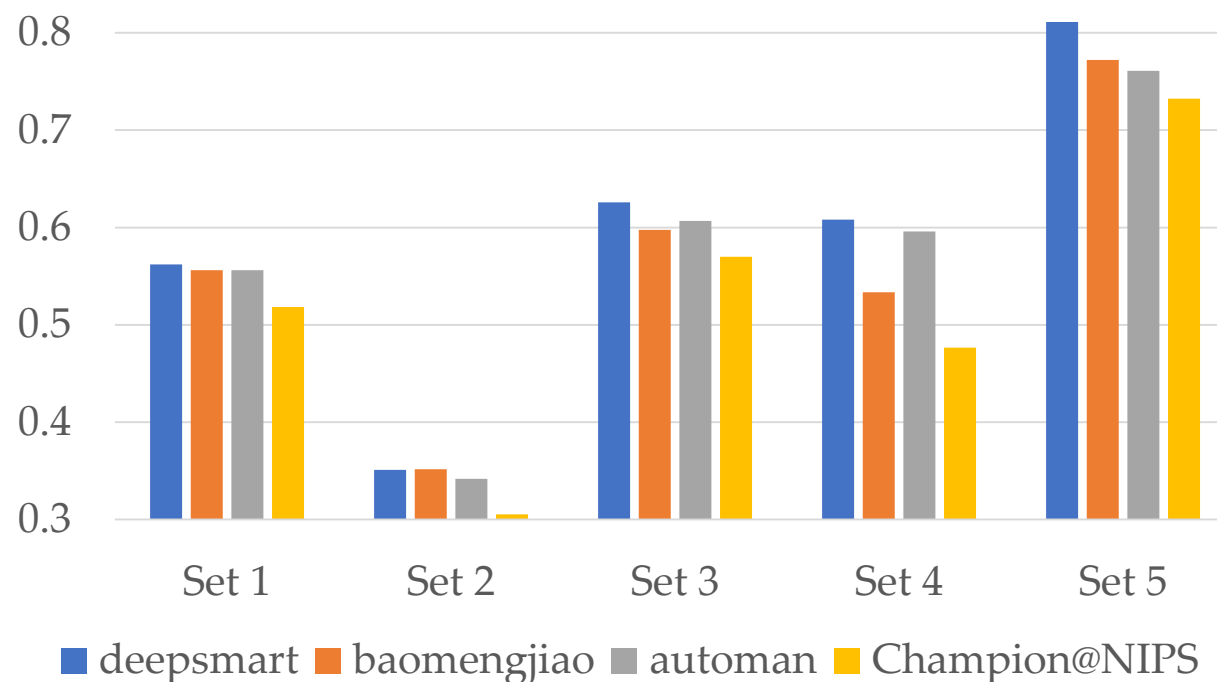


An Overview

- Lasts 3 months
- About 130 teams, 27 teams qualified for the final ranking
- 550+ submissions!
- +50% more Time Budget than NeurIPS 2018
- **Much Better** Performance than Champion@NeurIPS

Great Improvement vs. Champion@NeurIPS!

Feedback Phase:
PAKDD Top3 vs. Champion@NeurIPS



Winners!

- **Champion: DeepBlueAI**

- *Zhipeng Luo, Jianqiang Huang, Mingjian Chen*
- DeepBlue Technology (Shanghai) Co., Ltd

- **Second Place: ML Intelligence**

- *Mengjiao Bao, Hui Xue, Yihuan Mao, Yujing Wang*
- Microsoft Research Asia, Beihang University

- **Third Place: Meta_Learners**

- *Zheng Xiong, Jiyan Jiang, Wenpeng Zhang*
- Tsinghua University

Following Activities

- KDD Cup 2019 AutoML Competition
- AutoML Workshop @ ICML 2019
- AutoML Special Issue at TPAMI
- AutoDL Competition at NeurIPS 2019



6th ICML Workshop on Automated Machine Learning



Call for papers - Special Issue
Automation in AI and Machine Learning



Help Automating Deep Learning

We're Hiring!



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Let's begin!