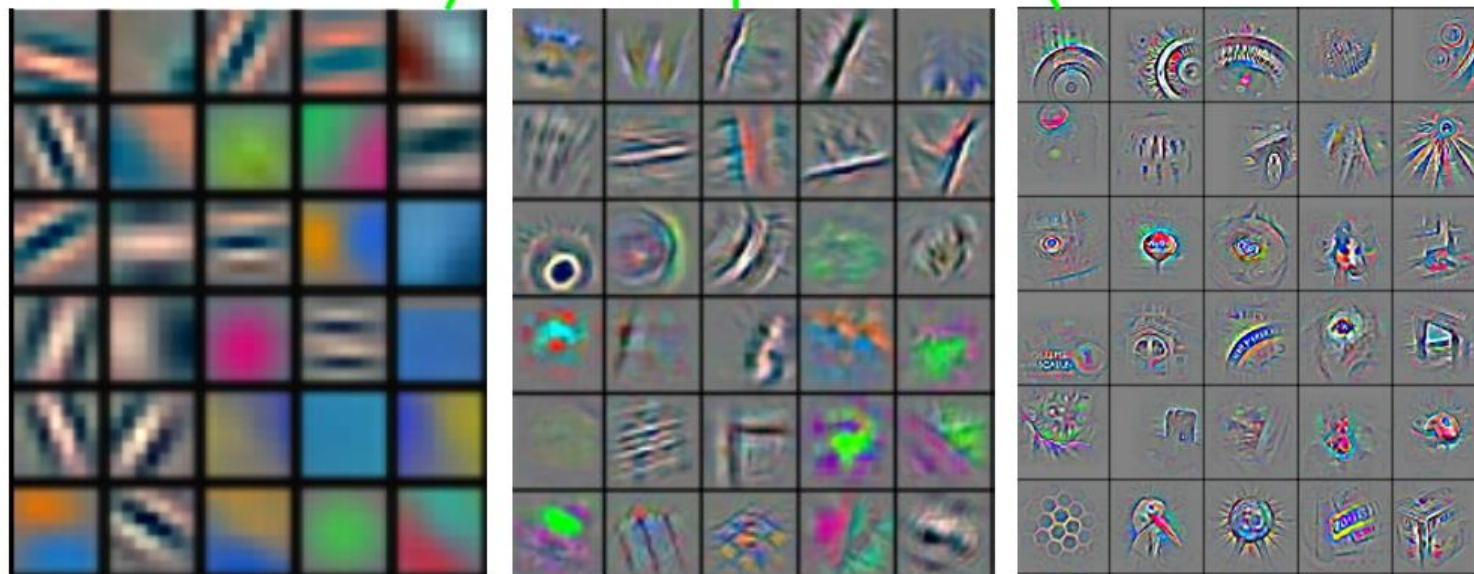
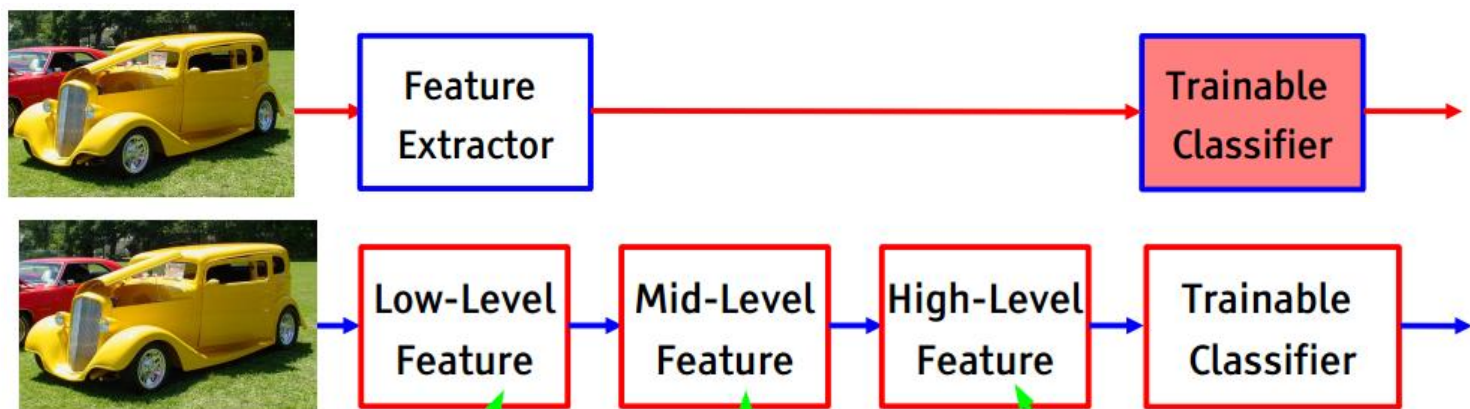


CONCLUSIONS

We reviewed machine learning methods



Feature visualization of convolutional net trained on ImageNet from [Zeiler & Fergus 2013]

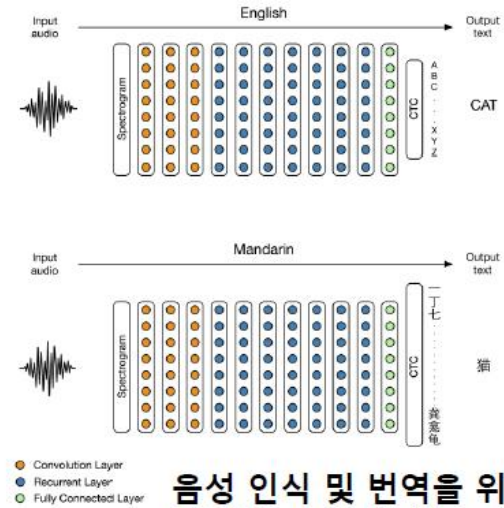
			Tasks						
			ADAS						
			Self Driving						
			Localizati on	Perception	Planning/ Control	Driver state	Vehicle Diagnosis	Smart factory	
Methods	Traditional	Non-machine Learning		GPS, SLAM		Optimal control			
		Machine-Learning based method	Supervised	SVM MLP		Pedestrian detection (HOG+SVM)			
	CNN				Detection/ Segmentat ion/Classif ication	End-to- end Learning			
	RNN (LSTM)				Dry/wet road classificati on	End-to- end Learning	Behavior Prediction/ Driver identificati on		*
	DNN							*	*
	Reinforcement				*				
	Unsupervised							*	

Deep Learning?

- Ranzato's definition
 - a method which makes predictions by using **a sequence of non-linear processing stages**. The resulting intermediate representations can be interpreted as **feature hierarchies** and the whole system is jointly learned from data. Some deep learning methods are probabilistic, others are loss-based, some are supervised, other unsupervised...

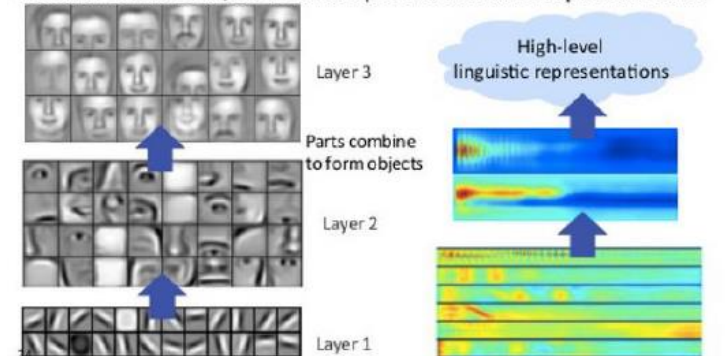
딥러닝 모델의 특징

- 다층구조 (multi layer)
 - 신경망의 구조 모사
 - 상위 층으로 갈 수록 추상화된 정보가 학습과정에서 자동으로 생성
- 문제 해결과정자동화
 - End-to-end learning
 - 사람의 개입을 배제하고 오직 raw input과 output 사이에 모든 과정을 데이터에서 학습하는 방향 추구
- 분산 표현
 - Distributed representation
 - 여러 뉴런이 협력하여 정보 저장/처리



음성 인식 및 번역을 위한 딥러닝 모델 사례(Baidu)

Successive model layers learn deeper intermediate representations



Prior: underlying factors & concepts compactly expressed w/ multiple levels of abstraction