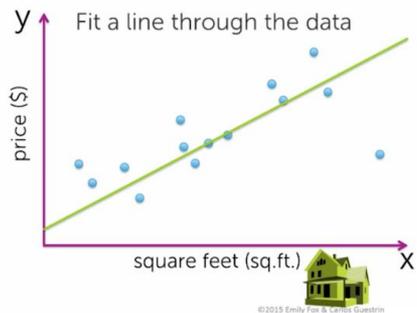


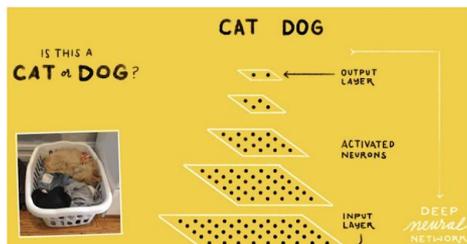


## Supervised learning (example, label)

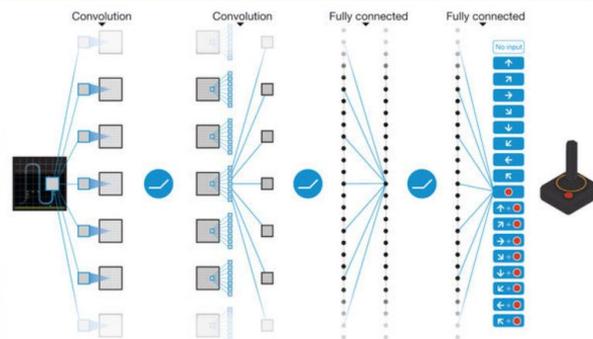
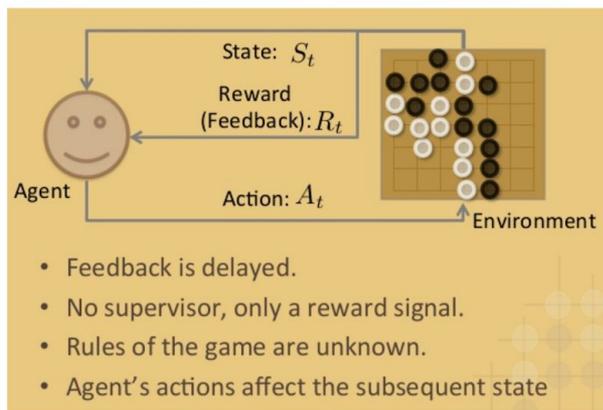
*Regression*: predict real numbers



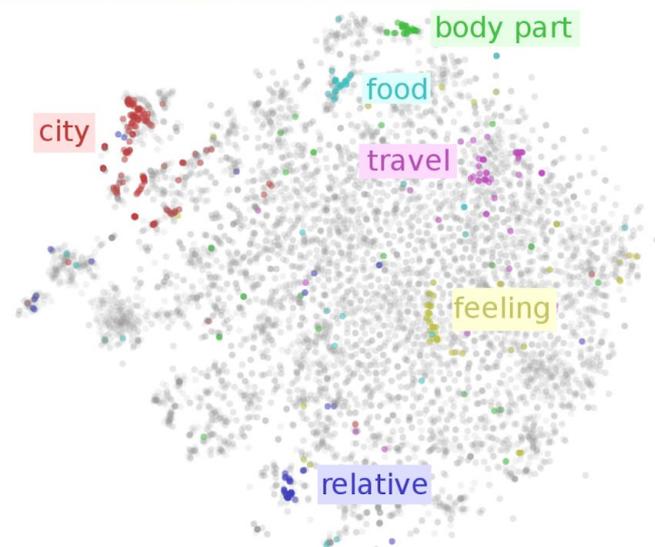
*Classification*: predict discrete categories (binary, multi)



## Reinforcement learning (agent, environment)



## Unsupervised learning (data only)



<https://colah.github.io/posts/2015-01-Visualizing-Representations/>

## Approximate Bayesian inference

Use  $q^*$  to approximate  $p(\cdot|y)$

Optimization  
 $q^* = \operatorname{argmin}_{q \in Q} f(q(\cdot), p(\cdot|y))$

Variational Bayes  
 $q^* = \operatorname{argmin}_{q \in Q} KL(q(\cdot)||p(\cdot|y))$

Mean-field variational Bayes  
 $q^* = \operatorname{argmin}_{q \in Q_{MFVB}} KL(q(\cdot)||p(\cdot|y))$

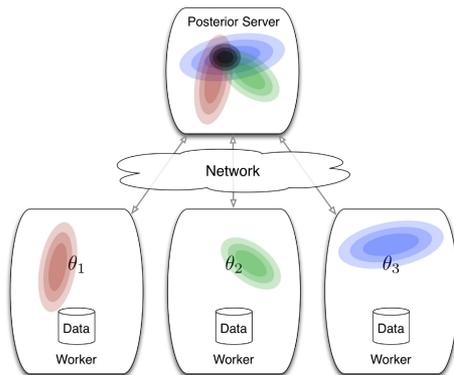
- Coordinate descent
- Stochastic variational inference (SVI) [Hoffman et al 2013]
- Automatic differentiation variational inference (ADVI) [Kucukelbir et al 2015, 2017]

## Variational inference

## Bayesian deep learning and Deep Bayesian learning

## Distributed Deep Learning

### Distributed Bayesian Learning



# AI in industries

# Automotive industry

**14 CAR COMPANIES**  
CONTROL A  
**COMBINED 54 BRANDS**



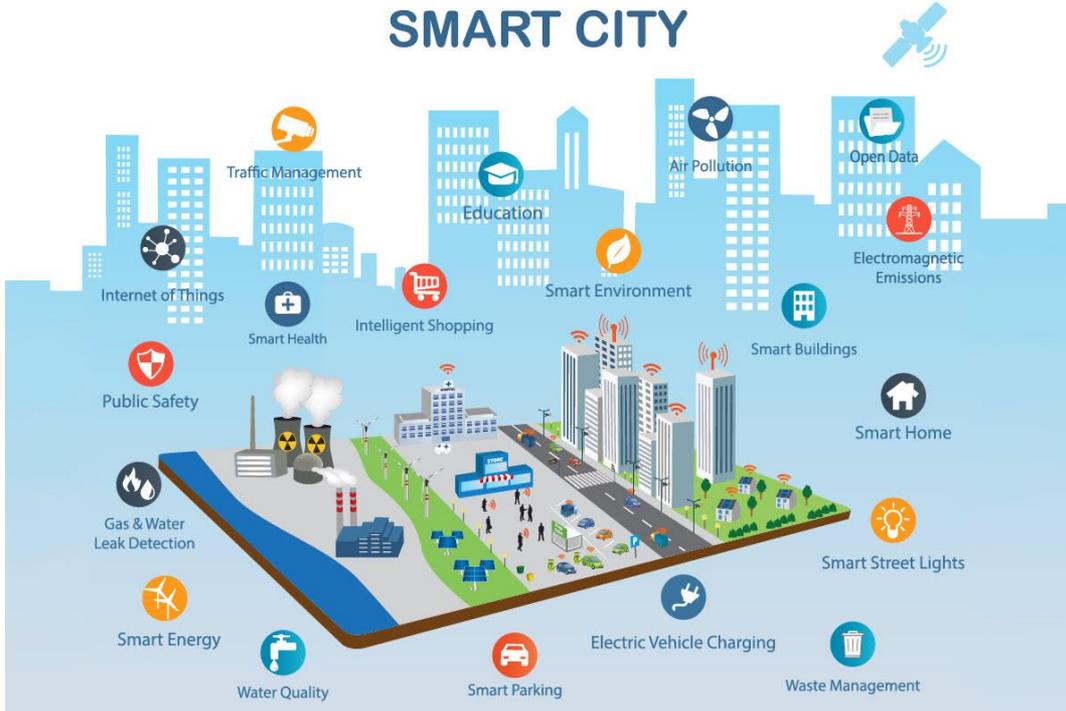


## Traffic-analysis key players

### INRIX

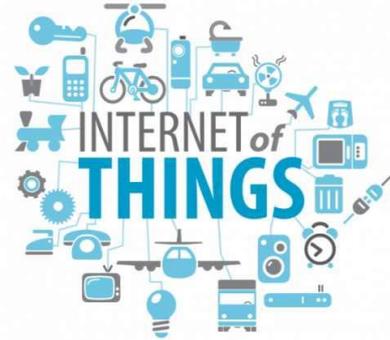
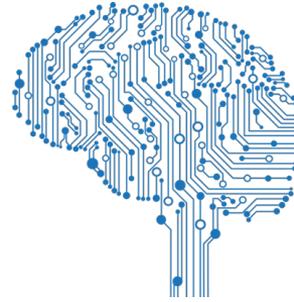
100 million vehicles using their solution predict how traffic will flow via historical traffic patterns, weather and local events data.

## SMART CITY



# Smart cities

**BIG DATA**



SmartCity



**Virtual Realty**



**BLOCKCHAIN**



# Construction industry



Landmark 81 - HCM city

20% cost - design  
and construct the  
building

80% cost - operate

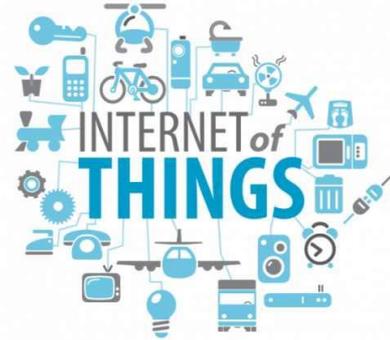
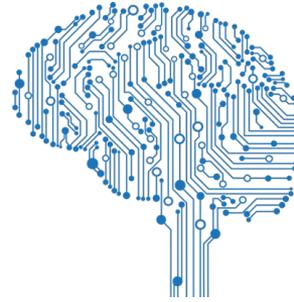


## Key players in construction industry

### REVIT autodesk

BIM (Building Information Modeling) is an intelligent 3D model-based process that gives architecture, engineering, and construction (AEC) professionals the insight and tools to more efficiently plan, design, construct, and manage buildings and infrastructure.

**BIG DATA**



SmartCity



**Virtual Realty**

# VietAI

BUILDING A COMMUNITY OF WORLD-CLASS  
AI TALENTS IN VIETNAM





**VietAI**

*Official Logo of VietAI Organization*

## VISION

Inspire people to solve meaningful and impactful problems for not just Vietnam but also the world.

Bring Vietnam closer to AI superpower countries in the world.

## WHY WE EXIST

Artificial Intelligence (AI) is all around us under many forms from smart mobile devices, virtual assistants, to robots and self-driving cars. Despite rapid progress in AI over the last few years in many countries, Vietnam still lags behind, merely touching at the surface of the technology.



## WHO IS VIETAI ?

VietAI is a Non – Profit organization with long-term passion of training the next generation of young AI talents in Vietnam and further to build a strong Vietnamese AI community.

Its primary focus is cutting-edges training and educational projects on Machine Learning, AI benefitting youth Vietnamese.

## OUR VALUES:

Integrity | Professionalism | Innovation | Commitment



## OUR APPROACH

Its primary focus is cutting-edges training and educational projects on Machine Learning, AI benefitting youth Vietnamese.

Launched in 2017 as a hands-on AI training project, it has been attracted growing attention and is seen as the early-mover and leading innovator in AI Training ventures for youth in Vietnam.



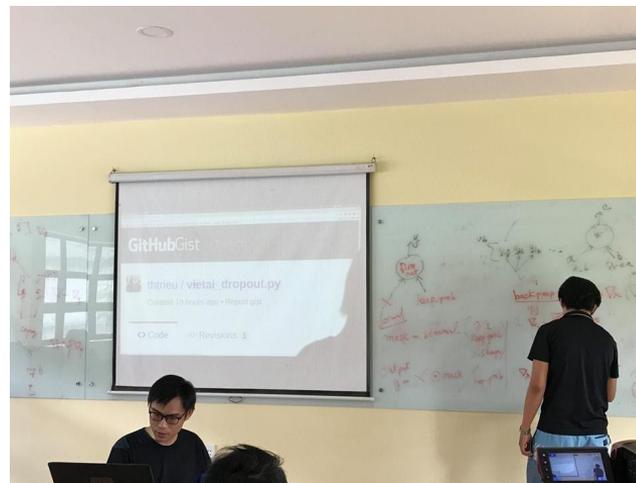
# CORE PROJECTS

## VietAI class:

- Cover: basic ML; DL for vision and language.
- Goal: train 120 ML engineers in Vietnam in 2018 (04 classes)

## VietAI seminar:

- Paper reading / presentation with US advisors (once per month)
- Later: work on projects together (e.g., Kaggle)



# CORE PROJECTS

## VietAI public talks:

With VietAI speakers and guests (every 2-3 months)

Engage the community



# CONNECTING TALENTS

## Seminar Advisors



Trieu Hoang, *Google Brain*



Dung Thai, *UMass*



Vu Pham, *DeepMind*

## Research Mentors



Kenneth Tran, *Microsoft Research*



Hung Bui, *DeepMind*



Khoa Luu, *CMU*

# MEET THE TEAM

## Founders



**Thang Luong**  
*Research Scientist at Google Brain*



**Thuc Vu**  
*Cofounder/CEO of OhmniLabs*

# MEET THE TEAM

## Advisor team



Tiep Vu, UPenn



Thang Luong, Google Brain



Huyen Nguyen, Netflix

# MEET THE TEAM

## Teaching team



Tiep Nguyen, UIT  
*Head of Academic - VietAI*



Kien Huynh,  
GraphicsMiner Lab



Phat Hoang, TechBase



Duy Vu,  
GraphicsMiner Lab



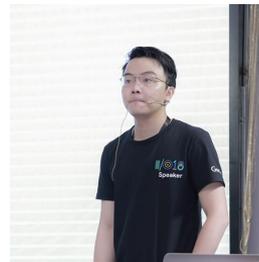
Phuong Hoang,  
GraphicsMiner Lab



Son Lam Ho  
University of Maryland.



Hoa M.Le  
Data Scientist at NextSmarty  
University of Cambridge



Ba Ngoc  
Founder  
Software Architect at ProtonX



Nguyen Binh<sup>22</sup>  
Hanoi University of  
Science and Technology

# MEET THE TEAM



## Operations Team



Long Nguyen  
US Lead Operations



Trang Nguyen  
US Operations



Tu Nguyen  
VN Operations Director



Hien Tran  
VN Marketing & Administration

## CONTACT DETAILS

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# Thank you for your attention

“In the face of doubt, openness prevails”

- Barack Obama