Introduction to my research

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Short Bio

- BS in Applied Physics, USTC
- MS in Electrical Engineering, USTC
- PhD in Computer Science, UCLA
- Assistant Professor in Computer Science & IDS, HKU
Research Overview

- Stochastic Optimization
- Foundations of Deep Learning
- Machine Learning
- Bayesian Sampling
- Graph Learning

Efficient algorithms for machine learning problems:
- Efficient gradient calculation
- Distributed system
- Sampling

Theoretical understanding and explanation of deep learning:
- Optimization
- Generalization
- Objective
- Training heuristics
- Model structure
- Robust model
- Privacy to data leakage

Machine learning with privacy and robustness guarantees
Potential Students in My Group

- Self-motivated (important!)
  - Know how to find answers from literature
  - Know how to validate the hypothesis by running simple experiments
  - Know how to approach a complicated problem by working on simple examples
- Critical-thinking (important!)
  - Know how to find the drawbacks or limitations of a paper
  - Think about what’re the reasons leading to the limitations of the prior works
  - Know how to find out possible approaches to address the limitations
- Hard-working (important!)
  - Concentrate on your project and try to complete it as soon as possible
  - Actively ask for help from your lab-mates or advisor if you cannot figure it out for many days
  - Do not easily give up
- Background (less important)
  - Mathematical background: calculus, linear algebra, matrices and tensors, statistics, optimization, etc.
  - Programming: familiar with Python is fine