# I (Eli) CHIEN

MACHINE LEARNING · CLUSTERING

 217-904-9343  |   ICHIEN3@ILLINOIS.EDU

## Education

**Graduate Student**, University of Illinois Urbana-Champaign (UIUC)          2017-present
- Electronic & Computer Engineering
- Advisor: Prof. Olgica Milenkovic

**Bachelor**, National Taiwan University (NTU), Taipei, Taiwan          2012-2016
- Electrical Engineering
- Overall GPA: 4.10/4.30(3.96/4.0)     Major: 4.11/4.30(3.94/4.0)

## Research Interests

My research interests lie in the field of machine learning and optimization. My recent works have focused on clustering problem, including hypergraph clustering and clustering under semi-supervised framework. I'm also working on the support estimation problem and the stochastic gradient method. In general, I am interested in designing efficient algorithms to solve problems with theoretical guarantees.

## Courses in UIUC (Obtained A+ in all)

Machine Learning Theory, Statistical Learning Theory, Random Processes, Big Data Optimization.

## Publications (* Equal Contribution)

1. "$HS^2$: Active Learning over Hypergraphs," **I Chien**, Huozhi Zhou, Pan Li. 2019 AISTATS [Under review]

2. "Query K-means Clustering and the Double Dixie Cup Problem," **I Chien**, Chao Pan, Olgica Milenkovic. 2018 NIPS [To be appeared]

3. "On the Minimax Misclassification Ratio of Hypergraph Community Detection," **I Chien\***, Chung-Yi Lin\*, I-Hsiang Wang. [Submitted to TIT, under review].

4. "Community detection in hypergraphs: Optimal statistical limit and efficient algorithms," **I Chien**, Chung-Yi Lin, I-Hsiang Wang. 2018 AISTATS.

5. "On the fundamental statistical limit of community detection in random hypergraphs," Chung-Yi Lin, **I (Eli) Chien**, I-Hsiang Wang. 2017 ISIT.

## Selected Projects

**On the Study of Stochastic Gradient Coordinate Descent(SGCD)**, UIUC          2018
- We combine the randomized coordinate descent with variants of SGD like SVRG under non-uniform sampling.
- In theory, we're able to show that our method is no worse then SVRG with non-uniform sampling.
- In simulations, we're able to show the superiority of our method comparing to both non-uniform SVRG and non-uniform RCD.

**Time series analysis Project**, NTU          2016
- Fit the ARIMA model (and its variants) for various real world data. For example, we use seasonal ARIMA model to predict the concentration of PM2.5 from the other air pollutant factors.