Guide to Survive in EC Lab@TKU

EC Lab@TKU 研究生指南

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Outline

1. Research Topics & Lines of Study (研究主題與學習課程)

2. Seminars & Meetings (研究會議)

3. Tools (工具)

4. Duties (職責)

Outline

研究主題與方向

- Randomized Algorithms (隨機演算法)
- Machine Learning Theory (機器學習理論)
- Algorithmic Game Theory & Mechanism Design (賽局理論與演算法 & 機制設計)
- Online Learning (在線學習)

研究生學習規劃

1. 修畢系上要求必修科目
2. 定期閱讀論文 (高品質之會議論文與期刊論文)
3. 從研讀論文與準備報告中找到有興趣的題目或方向
   - 或者由老師指定國科會計畫相關題目
4. 訂下論文主題或方向後，研讀相關文獻。以論文為主軸，不必廣，但求深
5. 修習或旁聽與論文相關課程，強化研究能力與技巧

Recommended Courses for Randomized Algorithms

- Data Structures (資料結構)
- Computer Algorithms (計算機演算法)
- Probability Theory & Statistics (機率與統計)
- Discrete Mathematics (離散數學)
- Randomized Algorithms (隨機演算法)*

Recommended Courses for Machine Learning Theory

- Computer Algorithms (計算機演算法)
- Probability Theory & Statistics (機率與統計)
- Mathematics for Machine Learning (機器學習數學)*
- Randomized Algorithms (隨機演算法)
- Algorithmic Game Theory (賽局理論與演算法)

Recommended Courses for Algorithmic Game Theory & Mechanism Design

- Computer Algorithms (計算機演算法)
- Probability Theory & Statistics (機率與統計)
- Mathematics for Machine Learning (機器學習數學)
- Randomized Algorithms (隨機演算法)
- Algorithmic Game Theory (賽局理論與演算法)*

Recommended Courses for Online Learning

- Computer Algorithms (計算機演算法)
- Probability Theory & Statistics (機率與統計)
- Mathematics for Machine Learning (機器學習數學)
- Randomized Algorithms (隨機演算法)
- Online Learning (在線學習)*

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Meetings

- Weekly Group Meeting
- Weekly Friday Seminar @IIS, Sinica (PI: Prof. Chi-Jen Lu)
- Weekly Book Club (Online; Host: Prof. Po-An Chen, NYCU)

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Coding & Writing

- C, C++, Python, PyTorch
- LaTeXfor writing reports and making slides (Beamer).
  - Can be done @Overleaf website.

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Must Have before Graduation (畢業必備要項)

- Thesis Proposal (論文計劃書)
- ≥ 10 times acknowledged paper presentations (十次以上由老師認可之論文報告)
- Thesis Oral Examination (論文口試)

其他研究生職責

- Weekly progress report (English)
- 擔任助教 (線性代數; 機器學習數學; 程式語言)
- 跑腿報帳
- 蒐集國科會計畫相關文獻
- 管理伺服器 (待購)
- 實驗室整潔

Wish You All the Best!