

Guide to Survive in EC Lab@NTOU

EC Lab@NTOU 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)
- 5 Mutter (嘮叨)

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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)
 - 參考 CS 研討會排名: [Conference Ranks 連結](#) (可以 Qualis 為準)
 - 參考 CS 期刊排名: [SJR 連結](#)
- 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, Academia Sinica (PI: Prof. Chi-Jen Lu)
- **Theory Day** in Taiwan.
- Possible joint meetings with other professors.
 - Prof. Chih-Chieh Hung @IIS, NCHU
 - Prof. Po-An Chen @IIS, NYCU
 - Prof. Chi-Jen Lu@IIS, Academia Sinica

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Coding & Writing

- C/C++, Python (Tensorflow/ PyTorch, Scikit-learn), ...
- \LaTeX for writing reports and making slides (Beamer).
 - Can be done @Overleaf website.
 - A [reference project](#) as a template.

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Must Have before Graduation (畢業必備要項)

- Weekly progress report (每週英文進度報告)
- Thesis Proposal (論文計劃書)
- ≥ 5 times acknowledged paper presentations (五次以上由老師認可之論文報告)
 - 以實驗室五人輪值為例，一年半 (78 週; 最後半年忙碩士論文) 共有：
78 - 期中考週 $\times 2$ - 期末考週 $\times 2$ - 寒暑假休假 4 週 - 其他休假 5 週)/5 人 = 13 週次/人。
- Thesis Oral Examination (論文口試)

其他研究生職責

- 擔任助教 (資料結構; 程式語言; 線性代數; 機器學習數學, etc)
- 研究生相關庶務 (報帳, 請購, ...)
- 蒐集國科會計畫相關文獻
- 管理伺服器 (待購)
- 實驗室整潔

一些嘮叨與忠告

- 態度決定一切；請保持積極的態度
- 件件工作反映自我，凡經我手必為佳作
- 追求卓越，不要妄自菲薄
- 畢業的時間掌握在自己手裡，請做好自己的時間規劃

Wish You All the Best!