

# Academic Writing

Sept 2017

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# Before Writing

- Finding something to write about
  - (the Research Question?)
- What to study – timely, interesting
- Find and follow Leading Researchers in your area
  - ‘Imitate the master to become the master’
- Find Important Journals, Conferences,
  - Keep an eye on review papers, books
  - Organize Journal Clubs with a small group
- Find and know important Keywords, Taxonomy, Arxiv threads
  - If you don’t know how to search effectively, you can’t find
- Find and learn computational tools and libraries
  - Example: Interested in deep learning? Have a working copy of TensorFlow or pyTorch or Theano on your computer. Know how to use it/them

# Compiling a Bibliography

- ‘The Literature is smarter than you’  
My PhD advisor to me (and his advisor to him)
- ‘Luck prefers the prepared mind’  
Louis Pasteur
- Reference managers
  - Bibtex file
  - Mendeley
  - JabRef

# Preparation for Writing

- Writing text that is easy to read is notoriously hard – even in your mother tongue
- A good practice strategy: Writing short tutorials for your self
  - Example: 3SAT problem
  - Example: Logistic Regression, Particle filtering
  - Example: A short survey for checking the correctness of Software, with an application on device drivers
  - ... You can use these in your introduction
- Keeping a log book of your computational experiments and building the habit of writing a short paragraph
  - When you revisit after your one week vacation or busy period, you have a starting point and do not have to start from scratch

# Designing a study

- Start with an hypothesis – often an incremental improvement
  - A faster method
  - A modification in an algorithm/model to obtain ‘better’ results
    - Solution Quality
    - Execution Time
    - Impressive Demonstration

# Types of Journal Papers

- Original Research – novel methodology
- Application papers – nontrivial application of known methodology
- Letters to Editor/Short Reports
- Review articles

# Journal Paper

- A Definite Form
  - **Title and Abstract**
  - Introduction
  - Models/Methods/Algorithms
  - Experimental Results
  - Discussion and Conclusions
  - Appendix: Detailed Proofs, additional results, extra material that may have been omitted at a first read