Some experience of research

Cao Truong Tran

Outline

- **Essential research skills**
  - ✓Choose a research topic
  - ✓Propose feasible objectives
  - ✓Search and select suitable papers for reading
  - ✓Read and summarize a paper
- **How to write a paper**
  - ✓Structure of a research paper
  - ✓How to write specific sections
  - ✓Some writing tips
- **Statistical test**

Choose a research topic

- Criteria
  - ✓Hot
  - ✓Suitable

- How
  - ✓Supervisors
  - ✓Read recent survey papers

Propose feasible objectives

- Should propose several big objectives

- How
  - ✓Future directions in existing papers
  - ✓Good background related research topic

- Each proposed objective
  - ✓Propose some sub objectives
  - ✓Why?
  - ✓How?

Search and select suitable papers for reading

- Link down papers: http://gen.lib.rus.ec/scimag/index.php
- Select suitable papers
  - ✓ Year
  - ✓ Authors
  - ✓ Citation
  - ✓ Publisher

Read and summarize a paper

- Survey papers: get overall ideas
- Specific paper:
  - ✓ Key ideas
  - ✓ How?
  - ✓ Results?
  - ✓ **Limitation?**

Structure of a research paper

- Title
- Abstract
- Introduction
- Related work
- Proposed methods
- Experiment design
- Results and discussion
- Further analysis
- Conclusion and future work

Introduction

- Why?
  - ✓ General statement
  - ✓ Motivation
    - ✓ What have been done/summarise
    - ✓ Limitation of existing works: 1,2,3
- What (goals)
  - Overall goal
  - Specific goals
- Organization

Related work

- Answer more details why in introduction
- Related to proposed methods; benchmark methods
- **Critical analysis**

Proposed method

- Overall ideas
- Part 1, 2, 3..
- Summary

Experiment design

- Benchmark methods: common, state of art

- Benchmark datasets

- Parameter settings

Results and discussion

- Run multiple times
- Use statistical tests
- Should use: line graph, bar chart…

Abstract

- General statement

- Existing methods and limitation

- Key ideas of proposed methods

- Summarize results

Conclusion and future work

- General statement
- Summarize the proposed methods
- Summarize results
- Future work

Some writing tips

- Academic word list: AWLmostfreqsublists.pdf
- IELTS style: topic sentence-> supporting sentences
- Simple words, simple structures, coherence