Research Process

- Selecting a Problem
- Picking a Solution Method
- Performing the Research
- Evaluating the Results
- Communicating Results
Selecting a Problem

- Invent a new field & stick to it?
- Do “Real Stuff”: solve problem that someone cares about

Picking a Solution Method

- Let Complexity Be Your Guide?
  - Keep things simple unless a very good reason not to
    - Pick innovation points carefully, and be compatible everywhere else
  - Complexity cost is in longer design, construction, test, and debug
Performing the Research

Use intuition to conduct your research?

- Use intuition to ask questions, not to answer them
- Run experiments to discover real problems

Evaluating the Results

Avoid Feedback?
Never be Proven Wrong?

- Report in sufficient detail for others to reproduce results
  - can’t convince others if they can’t get same results
- For better or for worse, benchmarks shape a field
Communicating Results

Do write before experimenting.
Do not define terms, nor explain anything.
Do not replace “will do” with “have done”.
Do not mention drawbacks to your approach.
Do not reference any papers.

Rephrase & cite existing work
Plagiarism= (no cite) OR (no rephrase)

References

- David Patterson, “How to Have a Bad Career In Research/Academia”.