Research Method and Attitude

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Research Curve (IDPTI)
Research Method (IDPTI)

- You search for an IDEA
- You create a DESIGN
- You create a PROTOTYPE
- You develop a THEORY
- You develop an IMPLEMENTATION
You search for an IDEA

- IDEA = a solution to some problem

Examples

- How to reduce power?
  - A novel scheduling/placement technique that can reduce power consumption

- How to accelerate coverage estimation?
  - An acceleration technique that can speedup an existing coverage estimation method

- How to ...?
  - A ... technique that can ... (do something GREAT!)
You create a DESIGN

- DESIGN = an algorithm, a methodology, a hardware or software system design, ...

Examples

- A scheduling/placement algorithm that can reduce power consumption
- A partial model checking method that can speedup coverage estimation
- A … system that can …
You create a PROTOTYPE

- **PROTOTYPE** = a rapid, rough implementation of your design

- Examples
  - A prototype program for low-power scheduling that can be applied to illustration examples
  - A prototype program (system) for accelerating coverage estimation that can be applied to illustration examples
You develop a THEORY

- THEORY = An analysis of the net benefit of your proposed solution
- Examples
  - How much power consumption can be reduced at the price of what kinds of overheads?
  - How much speedup can be achieved at the price of what kinds of overheads?
You develop an IMPLEMENTATION

- IMPLEMENTATION = a working instance of your solution, namely a program, a system,…
- Examples
  - A low-power scheduler/placer
  - A fast coverage estimator
Research Attitude

- 积极
- 自动自发
- 负责
- 创新
- 深入浅出
- 具理想、有目标
- 随时自我充实、自我学习
- 做好时间管理（忙碌的人时间最多 —— 聖嚴法師）
Research Attitude

Autograph your work with quality

件件工作反映自我
凡經我手必為佳作
道理大家都懂，我們做到多少？