Introduction

Advanced Computer Networks
(cs6461)

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Today’s Talk

- Who am I?
- Who’s Byung Choi?
- What is research?
- What is PhD/MS?
- Typical format of a research paper
- Outline of cs6461
Who am I?

- Introduce yourself to the class
  - Name
  - Major or specialty
  - How long have been here
  - Future goals
  - Why I’m taking this course
  - My expectations
Who’s Byung Choi?

• Born in Korea
• 1985: BE in Electronic Eng. from Yonsei U.
• 1994: MS in Computer Science from Yonsei U.
• 2002: PhD in Computer Science from TAMU
• Aug 2002 – Present: Assistant Prof. @MTU
Who’s Byung Choi?

- 1985 – 1997: LG Information and Communications Lab., Korea
  - Call processing software
  - Switching system design

- Telecommunication vs. Computer Networks
Who’s Byung Choi?

- 1992 – 1997: ATM switches, Video on Demand (VoD) Services, IPoA (IP over ATM)

- Korean Accent: hopefully decode-able for most
What is Research?

• Try to give it an answer of your own!
What is Research?

- Something not studied by now
- Contributing to the body of knowledge in a specific area or topic
- Improving or enhancing existing methodologies
- Verifiable by other researchers
- Reproducible by other researchers
- More fundamental the better
- More influential the better
Research in a nut shell

• New ideas to a given research problem
  – Looks promising by systematic argument, mathematical analysis, simulation, and/or implementation

• Research problem:
  – Fundamental vs. incremental

• How do I know a (promising) research problem?
  – Smart people find one by themselves
  – See your adviser
PhD, MS, and BS

• What is the difference?
Learning?

- Undergraduates learn by repeating someone else’s wisdom
- Graduates learn by creating and discovering knowledge
- PhD vs. MS
  - PhD: Verified independent researcher to discover and create knowledge
  - MS: Tasted the way of doing research
Typical Format of Research Work

- Introduction to a research problem
- Related work
- System model
- Proposed idea/methodology
- Evaluation
- Conclusion
- Acknowledgment
- References
In cs6461 we do ...

• Formulate a research problem
  - Can be your own
  - Can be from your adviser
  - Can be from Byung Choi
• A survey on the topic
• Develop a system model for evaluation
• Develop a new idea (or improvement)
• Develop a plan of evaluation
• Get “A”
How to be a tenured student?

• A tenured graduate student: Stays at school a lot more than necessary, say about 10 years!

• Reasons:
  – Too ambitious
  – Not focused
  – Too lazy
  – No desire to graduate
  – Too bad adviser
How to pick up a good adviser?

• Academic marriage!
• Divorce is bad like in human life
• If you like one without any reason, just work with him/her
• Other factors:
  – RA-ship
  – Same cultural background
  – Research area
  – Personality
Who’s your adviser?

- Average nobody in the world
- Don’t know what to research for next decade
- Spend 60 – 70% of work time for teaching
- Just another nobody other than in his/her specialty
- One of mom and dad people.....
- The deal is: He/She knows how to do research!
  - You don’t, even though you would claim so:-)!
Promises: CS6461 takers are likely

• To succeed academically as they practice/taste research, the most important part of graduate level learning

• To get “A”

• To succeed in the rest of the academic training at MTU

• To succeed in the rest of the life!