

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
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- Telecommunication vs. Computer Networks

Who's Byung Choi?

- 1985 – 1992: Conventional TDMA switching systems (central offices)
- 1992 – 1997: ATM switches, Video on Demand (VoD) Services, IPoA (IP over ATM)
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- 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!