



INTRODUCTION TO RESEARCH



LOGISTICS



TEACHING STAFF



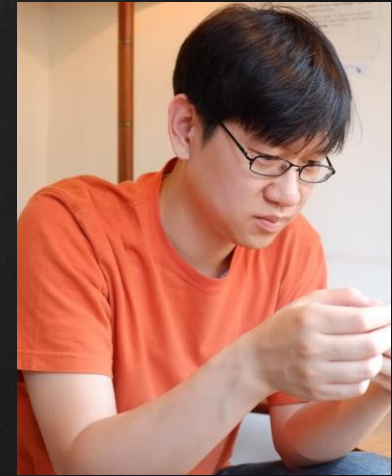
Prof. Juho Kim
Human Computer Interaction
PhD, MIT 2015

<https://juhokim.com/>



Prof. Sung-Ju Lee
Mobile Computing
PhD, UCLA 2000

[https://nmsl.kaist.ac.kr/
sjlee](https://nmsl.kaist.ac.kr/sjlee)



Prof. Shin Yoo
Software Engineering
PhD, Kings College London 2009

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TEACHING STAFF



Collectively 45 years of research experience
Passion in mentoring as well as research



TEACHING ASSISTANT



Jeongju Sohn

PhD Candidate

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CLASS WEBSITES & EMAILS

<https://www.kixlab.org/courses/i2r/index.html> : course content & announcements

<http://klms.kaist.ac.kr/course/view.php?id=99473> : grading & assignment upload

cs492c@nmsl.kaist.ac.kr : email to the professors & TA; please use this instead of personal emails

2.

WHY RESEARCH?



WHAT IS RESEARCH?

- X *Oxford*: The systematic investigation into and study of materials and sources in order to establish facts and reach new conclusions
- X *Merriam-Webster*: 1. careful or diligent search; 2. studious inquiry or examination; especially : investigation or experimentation aimed at the discovery and interpretation of facts, revision of accepted theories or laws in the light of new facts, or practical application of such new or revised theories or laws; 3. the collecting of information about a particular subject



WHY IS RESEARCH IMPORTANT?

Research creates knowledge

Improves quality of life

Advances society

Brings awareness



RESEARCH PROCESS

- X Problem identification
- X Solution design
- X Evaluation
- X Communication



BENEFITS OF DOING RESEARCH

Create knowledge, and knowledge is power!

Think and learn

Develop independent, critical thinking skills

Develop communication skills

Understand assertion requires supporting evidence

Job benefits: some positions (e.g., professors) hire only PhDs



Traveling

Defining what you work on

(usually) Flexible work hours (== you work all the time 😊)

Surrounded by smart people

For professors:

X No boss

X Choose collaborators



CHALLENGES

Pay is decent but not great

(sometimes) Long duration with no tangible output

Lots of smart(er) people working in the same field

Lots of setbacks

Family doesn't understand what you do (e.g., why go to school when no class?)



QUALITIES OF GOOD RESEARCHERS

- X Curious
- X Resilient to setbacks
- X Thick-skinned
- X Open-minded
- X Courageous
- X Communicative, articulate, good at selling
- X Self motivated, hard working, driven, committed

3.

ABOUT THIS COURSE



GOALS OF THIS COURSE

- X Have students “experience” various activities for research
- X Help students make informed decisions on career path
- X Pass on to students what we believe are best practices

We designed the course for undergraduates, but grad students are welcomed too!



WHAT THIS COURSE IS NOT

- X Teach students how to do (better) research
- X Encourage students to go to grad school
- X Sway students into certain research areas
- X Cover specific culture of any research area



COURSE ROADMAP

- X How to choose research area, school, and advisor
- X How to find and read papers
- X How to recognize good research and do good research
- X How to design and analyze results
 - X Basic stats
 - X Human studies
- X What happens to my paper after the submission



COURSE ROADMAP

- X How to review papers
- X How to present your research
- X What are the research ethics
- X How to market your research
- X How to write research proposals
- X Life as a researcher



WORKSHOPS

1. Writing workshop
2. Presentation workshop I
3. Presentation workshop II (elevator pitch)
4. CV/resume workshop
5. Mock Technical Program Committee (TPC) meeting



PANELS

1. How I selected my research area and advisor
2. Career paths as researchers
3. How to survive graduate school



4.

ASSIGNMENTS & GRADING



GRADING

Assignments	50%
Participation	30%
Presentations	20%



ASSIGNMENT #1: AREA SELECTION

- X Choose a research area for the purpose of this course (you are free to select a different area for your research career!). We provide you with the list of areas and a top conference for each area. You should browse through the recent program of conferences that interest you from the given list
- X Submit a max-500 word essay describing (i) why you chose that area and (ii) the research trend you noticed from the conference
- X Due September 6th 10am
- X Your submission will be posted on class website



ASSIGNMENT #2: PAPER SELECTION

- X From the research area and corresponding conference you selected in Assignment #1, choose a paper that excites you the most
- X Submit (i) a max-500 word essay describing why you chose that paper, why you think it's a good paper, major contributions of the paper, your critique, etc., and (ii) PDF of the paper
- X Due September 18th 10am
- X Your submission will be posted on class website



ASSIGNMENT #3: REWRITING THE ABSTRACT

- X Re-write (not revise) the abstract of the paper you selected in Assignment #2
- X In your submission, include the title and author information of the paper, the original abstract, and your abstract
- X Due September 27th 10am
- X Some of your writings will be discussed in the writing workshop



LATEX EXTRA CREDIT

- X For each of the Assignment #1–3, if you write it in LaTeX, you get 10% extra credit!
- X Submit your LaTeX source as well as PDF
- X LaTeX is the de facto standard of research writing preparation system
 - I have not read a good paper not written in LaTeX



ASSIGNMENT #4: REVIEWING PAPERS

- X Write constructive review of the assigned papers as a TPC member
- X The papers you review will also be reviewed by other TPC members, and you will participate in the discussion of the papers during the mock TPC meeting
- X Multiple dues per review. Date TBD





PRESENTATION #1

- X Present the paper you selected in Assignment #2
- X Five minutes each
- X October 30th and November 1st





PRESENTATION #2

- X Present an elevator pitch of the paper you selected in Assignment #2
- X One minute each
- X November 20th





PARTICIPATION

- X Participation is essential in effective learning in any class, but especially in this course
- X You can participate in many ways:
 - In class Q&A, discussion
 - Online discussion, Q&A
 - Workshop volunteering
 - Questions to panelist (pre- & live)
 - Performance at mock TPC meeting



COURSE POLICY

- X Plagiarism
- X Late submissions
- X English
- X Auditing
- X Registration



RECOMMENDATION

- X You will get the most out of this course if you passionately perform the activities and discuss your experiences in class

- X Truly an interactive class
 - X You won't make any mathematical proof or write any code
 - X No need to take notes

- X If you enjoy the activities and discussion, you might have a career in research



PLEASE PARTICIPATE IN THE SURVEY

http://bit.ly/cs492c_survey