

# Teaching Programming in the AI Era

KSEE (Korean Society for Engineering Education)

Sookmyung Women's University

Younghoon Park

# Introduction

- Younghoon Park Ph.D. (박영훈 )
- Associate Professor in Division of Computer Sciences,  
Sookmyung Women's University.
- Member of KSEE
- Research Interests:
  - Computer Security
  - Blockchain
  - Quantum Computing

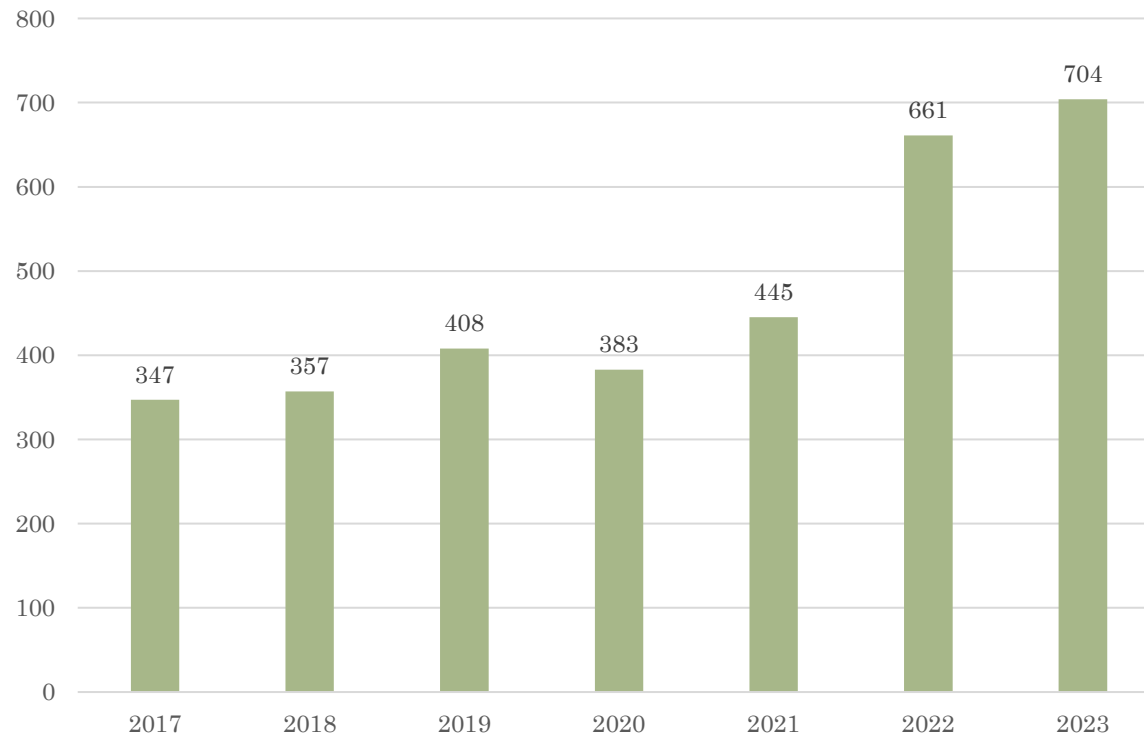
# KSEE

- Established in 1994. 01. 27
- 244 Lifetime Members, 3,115 Individual Members and
  - 265 Institutional Members
- Current Activities
  - Annual Conference
  - Symposium and Workshops
  - Innovation in Engineering Education Forum
  - Workshop on Engineering Ethics
  - Workshop on Critical Thinking in Engineering Classroom
  - Engineering Faculty Workshop on Teaching and Learning etc.



# KSEE Annual Conference

- Registration doubles between 2017 and 2023.
- International session as an online/offline hybrid.
- Will be held on September 22–23 at EXCO, Daegu, South Korea.



**KSEE**  
Korean Society for Engineering Education

**KSEE 30th Anniversary**  
2023 KSEE Annual Conference

**Engineering Education for Shared Cooperation in the Endemic Era**

Sep. 21 - Sep. 22, 2023 | Ramada Plaza Jeju Hotel

**Submission Topics**

- Integrating research and engineering education
- Innovative teaching and learning strategies
- Methodologies to assess teaching and learning strategies
- Curriculum innovation
- Pandemic-related changes to pedagogy
- Remote learning teaching and learning strategies
- Educational technologies and their impact on teaching and learning
- Diversity, equity, and inclusion in engineering education
- Industry-academia partnership
- K-12 outreach programs

**Abstract submission**

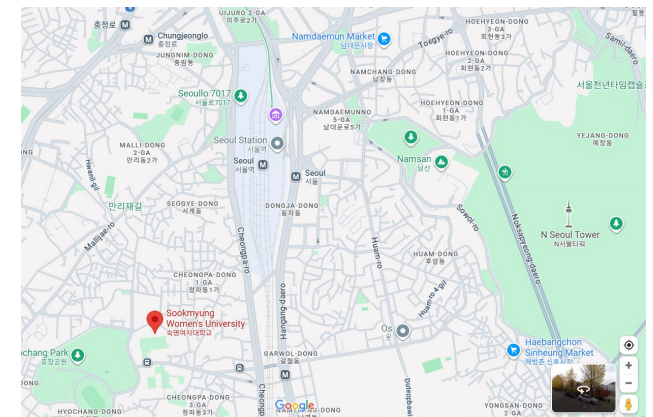
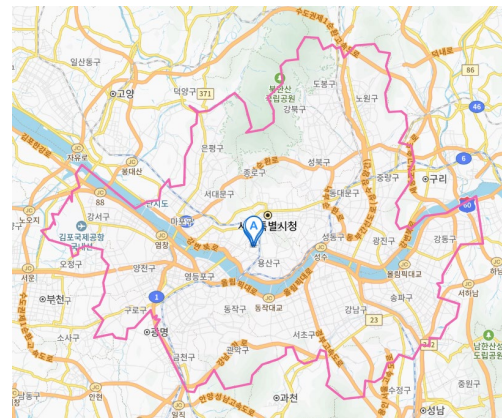
- 1500 or less word abstract
- Due : August 4, 2023

**Registration fee**

- General : 300 USD
- Undergraduate Student : 150 USD

# Sookmyung Women's University

- □ □ □ □ □ □ □ □ (□ □ □ □ □ □ □ □)
- Founded in 1906 by the Royal Family of King Go-Jong from the Joseon Dynasty
- 422 full-time professors
- 12,231 undergraduate students (99 foreign students)
- 2,866 graduate students (174 foreign students)
- Located at center of Seoul
- Close to key places such as Seoul Station, Itaewon, and Myeongdong





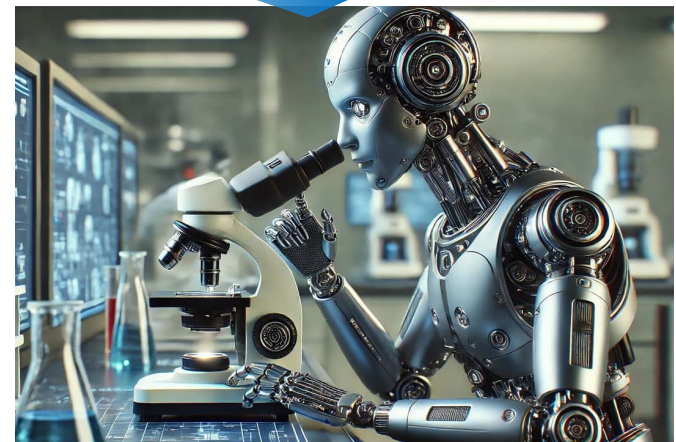
# A Shocking Reality: Developers Are Being Laid Off

- Microsoft: thousands of developers laid off
- Google, Amazon, Meta: massive workforce reductions



# Transformation in the Industry

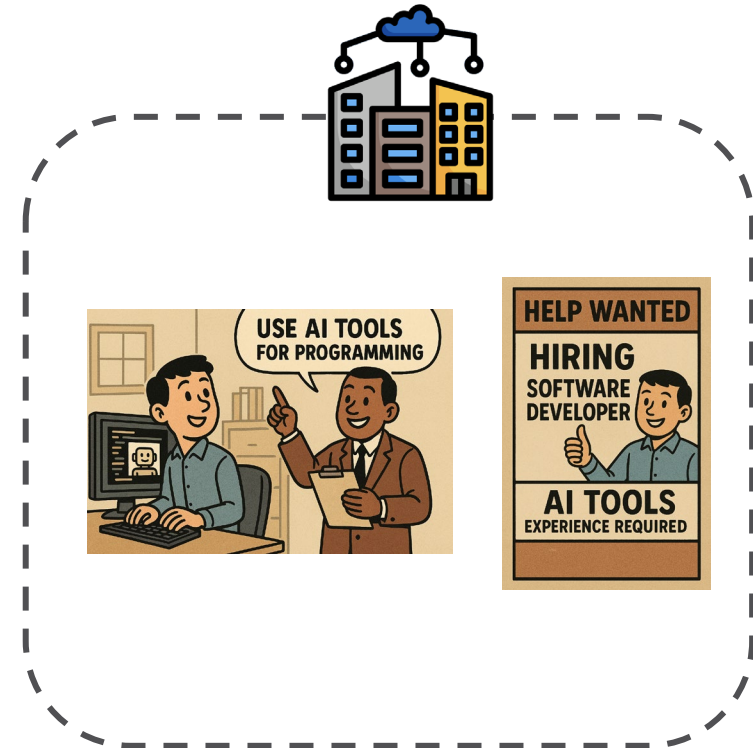
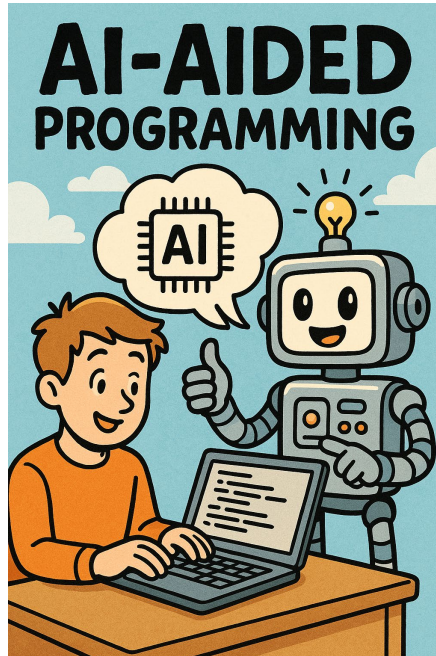
- Past → manual coding
- Present → AI-assisted coding + verification
- Future → problem solver, system designer, quality assurer





# The Growing Education–Industry Gap

- Industry: promotes AI adoption
- Universities: restrict AI in coursework
- Consequence → Mismatch in skills & expectations





# Why Companies Embrace AI

- Increased productivity
- Faster prototyping & delivery
- Reduced costs, more efficiency



Fewer people,  
more output!



Increased  
productivity



Faster  
prototyping



Reduced  
costs

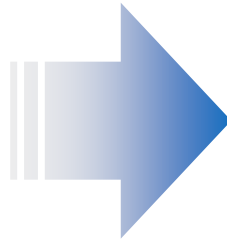
# Risks for Education

- Shallow learning of fundamentals
- Weaker debugging skills
- Difficulty assessing student work
- Risk of academic dishonesty

# What Education Really Needs

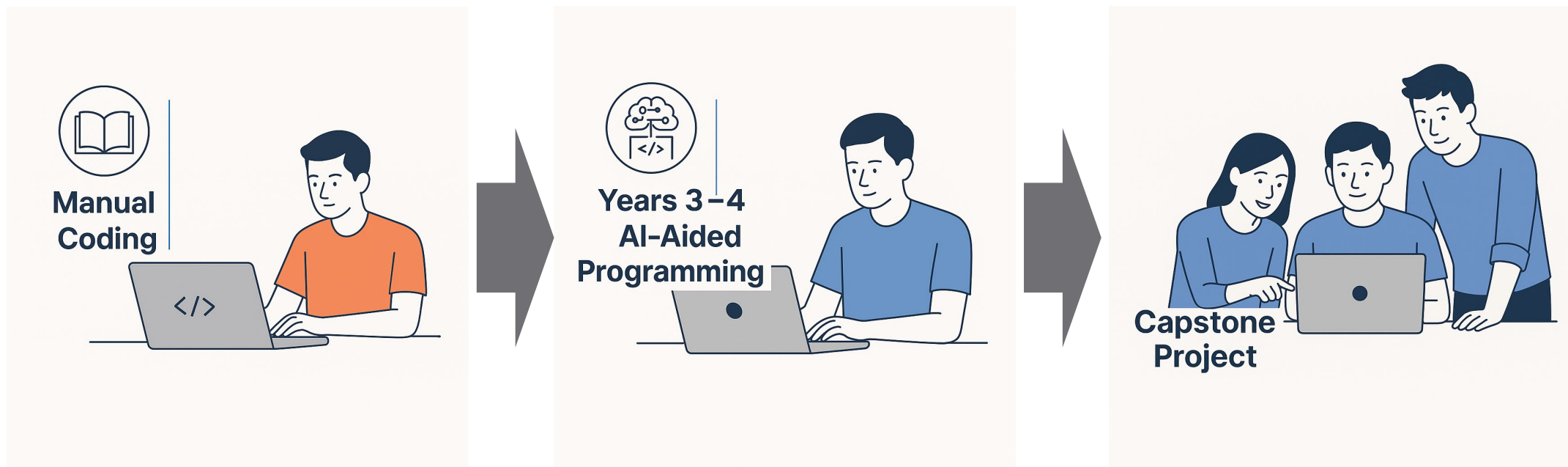
- Critical thinking
- Problem definition & decomposition
- Algorithmic understanding
- Compare AI vs human solutions

**Teaching With AI Instead of Against It!**



# Bridging the Gap

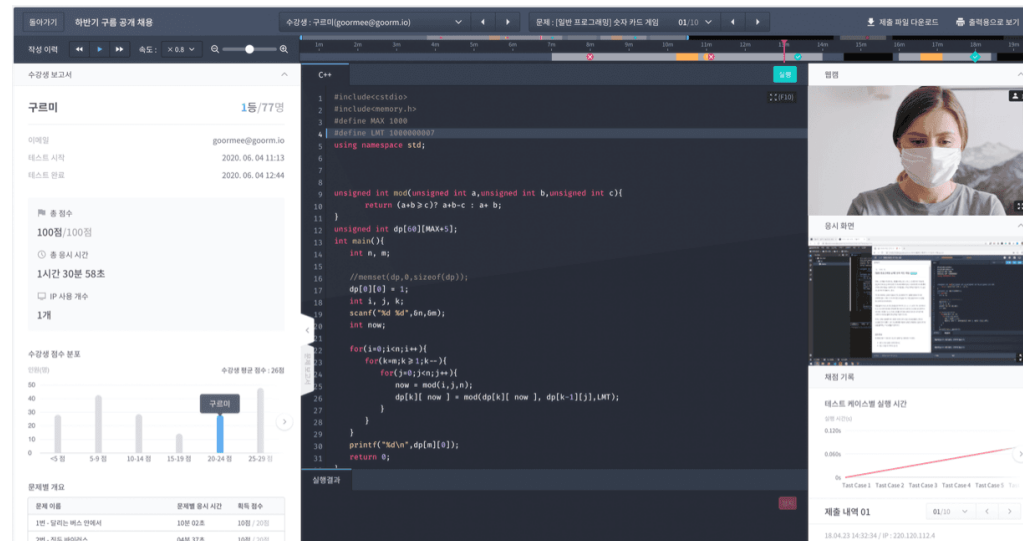
- Early years → manual coding, fundamentals
- Later years → AI-assisted projects
- Capstone: evaluate AI-generated solutions





# New Assessment Models

- Oral exams & live coding
- Process-based grading (not just final output)
- Collaborative projects with AI allowed



# Preparing Students for the Future

- Developers as “AI supervisors”
- Focus on creativity, design, ethics
- Graduates who adapt to industry needs

AI is not the end of education.  
It is the reason we must redesign it.