강의계획서

교과목명	운영체제특론			학수번호	09159001	이수	선택	학점	3
강의시간	수7 ,수8 ,수9	강의실	AI관/지상3층/307						
선수과목				공학인증 이수구분					

교수소속	IT융합대학 컴퓨터공학과	교수성명	Muksimova Shakhnoza	연락처	
e-mail	shakhnoza02@gachon.ac.kr	연구실		지도상담시간	
홈페이지/카페				조교	

핵심 역량						합계
융복합	30	전문성	30	의사소통	40	100%

강의 개요

This course provides a detailed study of modern operating systems, emphasizing their architecture and essential functions. By combining lectures, case studies, and practical projects, the course equips students with the skills to enhance operating system performance and tackle advanced computing challenges.

강의 목표

This course examines advanced operating systems, focusing on key design elements such as process management, memory allocation, and file systems. Through theoretical exploration and hands-on projects, students will enhance their ability to analyze and improve operating system functionality, equipping them to solve complex technological challenges.

강의 진행방법

강의			

Lectures and Presentations

평가요소	성적 평가방법	비율
출석		20
중간고사	projects	40
기말고사	projects	40
레포트		0
그룹 프로젝트		0
기타		0
합 계		100

교과목명	운영체제특론		학수번호	09159001	이수	선택	학점	3
강의시간	수7 ,수8 ,수9	강의실	AI관/지상3층/307					

과제명 및 과제작성 방법안내	제출일	제출물 유형 및 제출방법

* 과제지연시 패널티 기준 :

구분	교재명	저자	출판사	출판년도
주교재				
부교재				
참고자료				

강의 규정 (학습자 유의사항)

장애학생 지원내용

교과목명	운영체제특론		학수번호	09159001	이수	선택	학점	3
강의시간	수7 ,수8 ,수9	강의실	AI관/지상3층/307					

주차	기 간	수 업 내 용 및 학 습 활 동
1	03/03 ~ 03/07	Introduction to Advanced Operating Systems
2	03/10 ~ 03/14	Process Management and Scheduling
3	03/17 ~ 03/21	Memory Management
4	03/24 ~ 03/28	File Systems and Storage
5	03/31 ~ 04/04	Distributed Systems
6	04/07 ~ 04/11	Security in Operating Systems
7	04/14 ~ 04/18	Middleware Systems
8	04/21 ~ 04/25	Midterm Exam and Review
9	04/28 ~ 05/02	Advanced Topics in OS
10	05/05 ~ 05/09	Case Studies and Contemporary Issues
11	05/12 ~ 05/16	Project presentation
12	05/19 ~ 05/23	Project presentation
13	05/26 ~ 05/30	Project presentation
14	06/02 ~ 06/06	Project presentation
15	06/09 ~ 06/13	Course Summary

강의계획서

교과목명	최신소프트웨어개발방법론			학수번호	09174001	이수	선택	학점	3
강의시간	금8 ,금9 ,금10	강의실		AI관/지상4층/408					
선수과목				공학인증 이수구분					

교수소속	IT융합대학 컴퓨터공학과	교수성명	Abdusalomov Akmalbek	연락처	
e-mail	akmaljon@gachon.ac.kr	연구실	5-515, AI Building	지도상담시간	
홈페이지/카페				조교	

핵심 역량						합계
문제해결	40	협업	30	전문성	30	100%

강의 개요

Adaptive Software Engineering (ASE) is the newest methodology integrating AI, real-time feedback, and automation to enable continuous, intelligent, and resilient software development for rapidly changing user and system environments.

강의 목표

By the end of this course, students will be able to:

Understand the evolution of software development methodologies, including the shift from traditional to adaptive approaches.

Explain the core principles and components of Adaptive Software Engineering (ASE).

Analyze how AI, automation, and real-time feedback influence modern software development.

Compare ASE with existing methodologies such as Agile, DevOps, and MLOps.

Evaluate the benefits and challenges of implementing ASE in real-world projects.

Explore the latest tools and technologies used in ASE, including AI-assisted development and hyperautomation platforms.

Apply ASE principles to a simulated or small-scale software development scenario.

Discuss ethical, security, and maintenance implications of using AI-driven software methodologies.

강의 진행방법

강의	토론/발표	실험실습/현장학습	기타

This lesson will be attended by 3 hours in class (offline). This class is based on the theoretical lectures of the professor and at some time students are practiced. We will try to intigrate treotical knowledges with the practical implementations.

These presentations have been prepared for computer science graduate students to help them understand the basic to advanced concepts related to the Software Engineering and Design field!

In emergency situations or during business trips period class might be conducted online using the Webex application. Students will be informed in advance by email.

평가요소	성적 평가방법	비율
출석	F is given at the time of 1/4 or more absences	10
중간고사	Writing answers to given questions based on lesson subjects	30
기말고사	Writing answers to given questions based on lesson subjects	30
레포트	Homeworks (submission by cyber campus)	10
그룹 프로젝트	Student Presentations and Project Explanation	20
기타		0
합 계		100

교과목명	최신소프트웨어개발방법론		학수번호	09174001	이수	선택	학점	3
강의시간	금8 ,금9 ,금10	강의실	AI관/지상4층/408					

과제명 및 과제작성 방법안내	제출일	제출물 유형 및 제출방법
Assignments related to Software Engineering and Design! Homework 1 Homework 2		Report by cyber system
Each student will present one topic pertinent to the course, during the semester. The topic selection and presentation will be done in coordination with the instructor		Report by cyber system
Project. Making small groups to create software designs based on students' research areas or specific topics after discussing with the instructor.		Report by cyber system

* 과제지연시 패널티 기준 :

구분	교재명	저자	출판사	출판년도
주교재	Lecture Notes			
부교재	Software Engineering (9th Edition)			
참고자료	https://www.tutorialspoint.com/software_engineering/index.htm			

강의 규정 (학습자 유의사항)

This lesson will be attended by 3 hours in class (offline). This class is based on the theoretical lectures of the professor and at some time students are practiced. We will try to intigrate treotical knowledges with the practical implementations.

These presentations have been prepared for computer science graduate students to help them understand the basic to advanced concepts related to the Software Engineering and Design field!

In emergency situations or during business trips period class might be conducted online using the Webex application. Students will be informed in advance by email.

장애학생 지원내용

This lesson will be attended by 3 hours in class (offline). This class is based on the theoretical lectures of the professor and at some time students are practiced. We will try to intigrate treotical knowledges with the practical implementations.

These presentations have been prepared for computer science graduate students to help them understand the basic to advanced concepts related to the Software Engineering and Design field!

In emergency situations or during business trips period class might be conducted online using the Webex application. Students will be informed in advance by email.

교과목명	최신소프트웨어개발방법론		학수번호	09174001	이수		학점	
강의시간		강의실						

주차	기 간	수 업 내 용 및 학 습 활 동
조회된 데이터가 없습니다.		

강의계획서

교과목명	컴퓨터비전 2			학수번호	09179001	이수	선택	학점	3
강의시간	수4 ,수5 ,수6		강의실	AI관/지상3층/303					
선수과목				공학인증 이수구분					

교수소속	IT융합대학 컴퓨터공학과	교수성명	Umirzakova Sabina	연락처	
e-mail	sabinatuit@gachon.ac.kr	연구실		지도상담시간	
홈페이지/카페				조교	

핵심 역량						합계
						100%

강의 개요

강의 목표

강의 진행방법

평가요소	성적 평가방법	비율
출석	20	20
중간고사	20	20
기말고사	20	20
레포트	20	20
그룹 프로젝트	20	20
기타		0
합 계		100

교과목명	컴퓨터비전 2		학수번호	09179001	이수	선택	학점	3
강의시간	수4 ,수5 ,수6	강의실	AI관/지상3층/303					

과제명 및 과제작성 방법안내	제출일	제출물 유형 및 제출방법
This course provides an in-depth exploration of computer vision concepts, algorithms, and modern deep-learning approaches. It covers classical vision techniques, deep learning-based methods, and applications in fields like medical imaging, autonomous driving, and remote sensing.		
Understand fundamental image processing and feature extraction techniques. Develop and apply traditional and deep learning-based methods for object detection, segmentation, and recognition. Implement and optimize deep neural networks for computer vision applications. Understand 3D vision, multi-view geometry, and depth estimation techniques. Work with real-world datasets and research papers in computer vision.		

* 과제지연시 패널티 기준 :

구분	교재명	저자	출판사	출판년도
주교재				
부교재				
참고자료				

강의 규정 (학습자 유의사항)

장애학생 지원내용

교과목명	컴퓨터비전 2		학수번호	09179001	이수	선택	학점	3
강의시간	수4 ,수5 ,수6	강의실	AI관/지상3층/303					

주차	기 간	수 업 내 용 및 학 습 활 동
1	03/03 ~ 03/07	Introduction to Computer Vision
2	03/10 ~ 03/14	Feature Detection and Extraction
3	03/17 ~ 03/21	Image Classification and CNNs
4	03/24 ~ 03/28	Object Detection and Localization
5	03/31 ~ 04/04	Image Segmentation
6	04/07 ~ 04/11	Generative Models in Vision
7	04/14 ~ 04/18	3D Vision and Multi-View Geometry
8	04/21 ~ 04/25	Vision Transformers (ViTs) and Attention-Based Models
9	04/28 ~ 05/02	Advanced Topics in Computer Vision
10	05/05 ~ 05/09	Applications in Autonomous Systems and Robotics
11	05/12 ~ 05/16	Optimization and Model Deployment
12	05/19 ~ 05/23	Research Trends and Final Project
13	05/26 ~ 05/30	Research Trends and Final Project
14	06/02 ~ 06/06	Research Trends and Final Project
15	06/09 ~ 06/13	Research Trends and Final Project

강의계획서

교과목명	공학논문작성법			학수번호	09192001	이수	선택	학점	3
강의시간	화8 ,화9 ,화10	강의실		AI관/지상3층/307					
선수과목				공학인증 이수구분					

교수소속	IT융합대학 컴퓨터공학과	교수성명	Makhmudov Fazliddin	연락처	010-4912-4743
e-mail	fazliddin12@gachon.ac.kr	연구실		지도상담시간	
홈페이지/카페	https://cyber.gachon.ac.kr/			조교	-

핵심 역량						합계
전문성	40	융복합	30	문제해결	30	100%

강의 개요

This course provides engineering students with the skills needed to write technical papers, research reports, and conference journal articles. The focus is on structuring documents effectively, using precise technical language, and adhering to publication standards.

강의 목표

Understand the structure and components of an engineering paper.
Conduct technical literature reviews and synthesize information.
Write clear and concise abstracts, introductions, and conclusions.
Use proper citation and referencing techniques.
Present data effectively using tables, figures, and equations.
Edit and proofread technical documents for clarity and correctness.
Submit papers to journals and conferences following proper guidelines.

강의 진행방법

강의	서비스러닝	플립러닝	토론/발표

평가요소	성적 평가방법	비율
출석	15 Weeks Classes	10
중간고사	Midterm Project (Conference Paper)	30
기말고사	Final Project (Journal Paper)	40
레포트	Paper Presentation	20
그룹 프로젝트		0
기타		0
합 계		100

교과목명	공학논문작성법		학수번호	09192001	이수	선택	학점	3
강의시간	화8 ,화9 ,화10	강의실	AI관/지상3층/307					

과제명 및 과제작성 방법안내	제출일	제출물 유형 및 제출방법

* 과제지연시 패널티 기준 :

구분	교재명	저자	출판사	출판년도
주교재	The Craft of Scientific Writing 4th Edition	M.Alley	Springer	2018
부교재				
참고자료				

강의 규정 (학습자 유의사항)

장애학생 지원내용

교과목명	공학논문작성법		학수번호	09192001	이수	선택	학점	3
강의시간	화8 ,화9 ,화10	강의실	AI관/지상3층/307					

주차	기 간	수 업 내 용 및 학 습 활 동
1	03/03 ~ 03/07	Introduction to Technical Writing
2	03/10 ~ 03/14	Understanding Paper Structure
3	03/17 ~ 03/21	Research and Literature Review
4	03/24 ~ 03/28	Writing the Abstract and Introduction
5	03/31 ~ 04/04	Writing the Methodology Section
6	04/07 ~ 04/11	Presenting Results Effectively
7	04/14 ~ 04/18	Writing the Discussion and Conclusion
8	04/21 ~ 04/25	Referencing and Avoiding Plagiarism
9	04/28 ~ 05/02	Editing and Proofreading
10	05/05 ~ 05/09	Writing for Conferences or Journals
11	05/12 ~ 05/16	Ethics in Engineering Writing
12	05/19 ~ 05/23	Writing Grant Proposals and Technical Reports
13	05/26 ~ 05/30	Reviewing and Responding to Peer Reviews
14	06/02 ~ 06/06	Final Paper Submission Process
15	06/09 ~ 06/13	Final Presentations and Course Wrap-up

강의계획서

교과목명	데이터 중심 AI 개론			학수번호	12020001	이수	선택	학점	3
강의시간	월7 ,월8 ,월9	강의실	AI관/지상5층/508						
선수과목	Basic AI concepts, basic mathematics, and AI applications knowledge			공학인증 이수구분					

교수소속	IT융합대학 컴퓨터공학과	교수성명	MAJEED ABDUL	연락처	010-9503-9597
e-mail	ab09@gachon.ac.kr	연구실		지도상담시간	Monday, 1:00 PM ~ 3:00 PM
홈페이지/카페	https://gachon.webex.com/meet/ab09			조교	

핵심 역량						합계
문제해결	40	의사소통	30	융복합	30	100%

강의 개요

We have entered an era where artificial intelligence has emerged as the new threat to human wisdom and decision-making ability. In many cases, AI has started replacing/outperforming human beings with its capabilities of perceiving things just like humans. Therefore, we need to be aware of the latest developments in this technology, in particular, where this technology is heading in future endeavors and whether we are prepared for the forthcoming wave of AI or not. Keeping in mind the dramatically changing landscape of AI, we designed a practical course that solely focuses on recent data-related developments in this field. The purpose of this class is to provide the essential concepts and practical developments concerning a fledgling paradigm named, 'Data-Centric AI'. Specifically, we will be discussing the role of two schools of thought such as data-centric AI (DC-AI) and model-centric AI (MC-AI) in enhancing AI performance in various scenarios. The focus of this class will be on providing comprehensive knowledge about data-centric techniques and operations for various modalities as well as for the whole project life cycle. Since the application of DC-AI can increase the performance, robustness, adoption, and governance of most AI applications, and therefore, it significantly enhances the quality of work which in turn can be published in top-notch journals. The course will cover the core DC-AI techniques, pipelines, low/no code data-engineering platforms, and data-centric prototypes. It will help students to learn various data quality issues that can stem from working in the AI area and their corresponding solutions from the lens of data. Some general case studies focusing on DC-AI will also be provided that would significantly help students adopt relevant parts in their research.

강의 목표

On successful completion of the data-centric AI introduction course, students will be able to:
—To distinguish between two schools of thought (MC-AI and DC-AI) used in developing AI applications
—Understand and apply data-centric operations to improve the performance of AI models
—Understanding of workflow of recently developed data-centric AI techniques
—Identify and discuss data quality-related issues while working with diverse data modalities
—Exposure of workable data quality enhancement pipelines and resources (e.g., APIs)
—Insight into modern tools and libraries that are contributing to realizing DC-AI.
—understanding of where we stand in DC-AI and what lies ahead

강의 진행방법

강의	토론/발표	PBL	서비스러닝

In the beginning, the basic knowledge of AI (i.e., applications, unique features, existing models, etc.) will be discussed and analyzed. Later, comprehensive knowledge concerning development in model-centric AI will be given. After that, all major concepts of data-centric AI will be discussed along with examples. The focus will be on covering all relevant concepts related to tools, techniques, and pipelines of DC-AI.
Students will be assigned some latest SOTA papers and they will present the findings of the papers in a designated format. The course will be in a hybrid format (E.g., Tutor-driven and student-driven). A mini project or small lab task will also be assigned for evaluation of students.

평가요소	성적 평가방법	비율
출석	Attendance records	10
중간고사	Exam Paper and answer sheets	20
기말고사	Exam Paper and answer sheets	40
레포트	PPT + Word Docs	30
그룹 프로젝트		0
기타		0
합 계		100

교과목명	데이터 중심 AI 개론		학수번호	12020001	이수	선택	학점	3
강의시간	월7 ,월8 ,월9	강의실	AI관/지상5층/508					

과제명 및 과제작성 방법안내	제출일	제출물 유형 및 제출방법
State-of-the-art and Data-centric AI-related Research Paper Presentations [discussion of what is in the paper + what is not in the paper]	2025-03-31 ~2025-04-30	Report in PPT/Word form
Implementation of the paper with code & result analysis	2025-05-01- 2025-06-16	Report in PPT/Word form
Discussion of the research aspects [e.g., how to differentiate novelty in research papers, research paper type, etc.]	2025-06-02-2025-06-09	PPT
PPT on the implemented tasks	2025-06-16	PPT

* 과제지연시 패널티 기준 :

구분	교재명	저자	출판사	출판년도
주교재	Data Centric Artificial Intelligence: A Beginner’s Guide	Parikshit et	springer	2023
부교재	Practical Data-Centric AI in the Real World	Dan Jeffries	Evangelist	2021
참고자료				

강의 규정 (학습자 유의사항)

Attendance and group learning will be vital throughout the semester. Lecture notes will be uploaded right after each class on Cyber Campus for students. Participants must practice or learn each concept regularly. Furthermore, the following rules are rigorously applied to maintain the importance of this course.
→Attendance and attention are extremely important to understand the concepts sequentially. Also, F grade on four absences.
→A thorough review of the lecture notes after the class is required.
→Keeping important deadlines for each task and discipline in a class is a must.
→Planning separate time for both theory and practice is essential throughout the semester.
→Students note and agree that teaching materials including lecture presentation slides, video content, and source code, if any, belong to the lecturer. Therefore, students should not edit or distribute them without the permission of the lecturer.
→When using the whole or a part of the teaching materials, students should denote the source appropriately by declaring that the teaching materials were given by the lecturer.
→Any illegal violation of the intellectual property rights endowed by laws is strictly prohibited.

장애학생 지원내용

Students can meet in person with the Professor for any help. In addition, such problems can be solved via group study. Additional material and helpful links will also be provided for the students' help in each lecture as well as class. Furthermore, students are allowed to contact the Professor anytime via email with their questions off/in-class time. Lecture notes will include links to relevant sites for detailed knowledge. English difficulty will be adjusted for the Korean students, in case they register for this class. Also, lecture material and course speed will be adjusted considering the students' status.

교과목명	데이터 중심 AI 개론		학수번호	12020001	이수	선택	학점	3
강의시간	월7 ,월8 ,월9	강의실	AI관/지상5층/508					

주차	기 간	수 업 내 용 및 학 습 활 동
1	03/03 ~ 03/07	Week 1: Importance of Data-centric AI, Introduction to AI Applications, Challenges, and Trends
2	03/10 ~ 03/14	Week 2: Getting started with MC-AI and DC-AI
3	03/17 ~ 03/21	Week 3: Introduction to Label Errors and their Solutions
4	03/24 ~ 03/28	Week 4: Data Engineering for Everyone
5	03/31 ~ 04/04	Week 5: Framework of the DC-AI, Components, Requirements, and Expertise
6	04/07 ~ 04/11	Week 6: Dataset creation and curation
7	04/14 ~ 04/18	Week 7: Training & Testing of AI models
8	04/21 ~ 04/25	Week 8: Data-centric Evaluation of ML Models + DC-AI techniques for LLMs
9	04/28 ~ 05/02	Week 9: Methods for growing or compressing datasets
10	05/05 ~ 05/09	Week 10: Case study I about DC-AI approach: Spatial temporal-based fire risk prediction
11	05/12 ~ 05/16	Week 11: Case study II about DC-AI approach: Detection of Diabetic Retinopathy
12	05/19 ~ 05/23	Week 12: Interpretability in Data-centric ML
13	05/26 ~ 05/30	Week 13: Prompt Engineering & Data Augmentation
14	06/02 ~ 06/06	Week 14: Data Privacy & Security and Exposure to some Major SW such as KNIME
15	06/09 ~ 06/13	Week 15: Exams & Semester Project

강의계획서

교과목명	웹과 소셜미디어마이닝			학수번호	07204001	이수	선택	학점	3
강의시간	금7 ,금8 ,금9		강의실	AI관/지상5층/511					
선수과목				공학인증 이수구분					

교수소속	IT융합대학 인공지능학과	교수성명	Jawad Khan	연락처	01031048820
e-mail	jkhanbk1@gachon.ac.kr	연구실		지도상담시간	6pm~12pm
홈페이지/카페	https://sites.google.com/gachon.ac.kr/jkhan/home?authuser=2			조교	

핵심 역량						합계
전문성	100					100%

강의 개요

The Web and Social Media Mining course provides an in-depth exploration of techniques for extracting valuable insights from the vast and dynamic landscape of web and social media data. Covering content, structure, and user behavior, students will engage with key topics such as web content mining through Natural Language Processing (NLP) and sentiment analysis, web structure mining using link analysis and network modeling, and social media analytics to examine user interactions, community structures, and information diffusion. Additionally, the course delves into web usage mining, focusing on tracking user behavior and developing recommendation systems.

Students will gain hands-on experience with essential data preprocessing, feature engineering, and the application of machine learning and deep learning methodologies to web and social media data analysis. Real-world case studies, leveraging diverse datasets, will illustrate how these techniques can uncover digital traces of human activity, providing deep insights and predictive capabilities for complex socio-economic phenomena.

While students are free to use their preferred programming languages and tools, Python and Jupyter Notebooks will be the primary platforms for in-class demonstrations and sample code, making Python the recommended language for this course.

강의 목표

This course fosters innovation by introducing students to the latest methods and technologies in Web and Social Media Mining, encouraging creative application of these techniques to solve complex problems. By integrating insights from computer science, statistics, and social science, students learn to develop innovative solutions with the potential to significantly impact various sectors, including business, politics, healthcare, and more. Overall, "Web and Social Media Mining" is a necessary and forward-thinking course that prepares students for the future of data-driven decision-making, encourages interdisciplinary collaboration, and drives innovation in both computer science and related fields.

강의 진행방법

강의			

Lecture, Quiz, Assignments, and Experiment Practice

평가요소	성적 평가방법	비율
출석	Students absent for more than 1/4 of lecture days will be given F grade	10
중간고사	Written and practical exam	20
기말고사	Written and practical exam	20
레포트	Research paper presentation and report writing	20
그룹 프로젝트		0
기타	Quiz and assignment	30
합 계		100

교과목명	웹과 소셜미디어마이닝		학수번호	07204001	이수	선택	학점	3
강의시간	금7 ,금8 ,금9	강의실	AI관/지상5층/511					

과제명 및 과제작성 방법안내	제출일	제출물 유형 및 제출방법
Research Paper Review 및 Presentation	TBA	Written report and PPT
Research Paper Review 및 Presentation	TBA	Written report and PPT

* 과제지연시 패널티 기준 :

구분	교재명	저자	출판사	출판년도
주교재	Mining the Social Web, Social Media Data Mining and Analytics,	Mathew	O'Reilly Media,	
부교재	https://www.coursera.org/learn/social-media-data-analytics			
참고자료	https://web.stanford.edu/class/cs246/			

강의 규정 (학습자 유의사항)

1. Students need to attend more than two thirds (2/3) of each class in order to take the exam for that particular course.
2. If a student is ill or has an urgent matter preventing them from attending a lecture, they should inform me at least one day prior to the lecture.
3. If the act of cheating is discovered, received credit will be cancelled in accordance with internal regulations.

장애학생 지원내용

If you have any kind of disability that might make it hard for you to do the work, or if you need any special help, please tell me as soon as you can.

교과목명	웹과 소셜미디어마이닝		학수번호	07204001	이수	선택	학점	3
강의시간	금7 ,금8 ,금9	강의실	AI관/지상5층/511					

주차	기 간	수 업 내 용 및 학 습 활 동
1	03/03 ~ 03/07	Introduction to Web and Social Media Mining
2	03/10 ~ 03/14	Analyzing data from the Web and Social Media
3	03/17 ~ 03/21	Machine Learning for Web and Social Media Mining
4	03/24 ~ 03/28	AI-Driven Text Mining and Sentiment Detection
5	03/31 ~ 04/04	Pre-trained Large Language Models for Web and Social Media Data Analysis
6	04/07 ~ 04/11	Recommendation Systems in Web & Social Media
7	04/14 ~ 04/18	Network & Graph Analysis in Social Media
8	04/21 ~ 04/25	Midterm Exam
9	04/28 ~ 05/02	Frequent Pattern Analysis of Web Data
10	05/05 ~ 05/09	Data Modeling for Web and Social Data
11	05/12 ~ 05/16	Topic and Trend Analysis in Text Data
12	05/19 ~ 05/23	Community Detection in Social Networks
13	05/26 ~ 05/30	Social Network Big Data and Scalability
14	06/02 ~ 06/06	Ethics, Privacy, and Security in Web Social Media Mining
15	06/09 ~ 06/13	Final Exam

강의계획서

교과목명	머신러닝을 위한 최적화 이론			학수번호	11511001	이수	선택	학점	3
강의시간	금5 ,금6 ,금7		강의실	AI관/지상5층/511					
선수과목				공학인증 이수구분					

교수소속	IT융합대학 인공지능학과	교수성명	SOLAT FARANAKSADAT	연락처	
e-mail	faranak1995@gachon.ac.kr	연구실		지도상담시간	
홈페이지/카페				조교	

핵심 역량						합계
						100%

강의 개요

This course introduces a range of mathematical tools for modeling and analyzing optimization problems in machine learning and networking systems. Students will learn how to use mathematical techniques to evaluate the performance of machine learning models, apply various optimization methods to improve these models, and gain practical experience through hands-on exercises. The course bridges theoretical concepts with real-world applications, helping students develop a strong foundation in mathematical modeling and analysis.

강의 목표

1. Develop mathematical modeling and analytical skills for machine learning models.
2. Enhance problem-solving abilities using optimization techniques for networking systems and machine learning.
3. Understand mathematical approaches for evaluating the performance of protocols, algorithms, and systems.
4. Learn to design and apply new algorithms based on mathematical principles.
5. Gain hands-on experience in implementing and validating theoretical concepts in real-world scenarios.

강의 진행방법

평가요소	성적 평가방법	비율
출석		10
중간고사		0
기말고사		40
레포트		20
그룹 프로젝트		0
기타	Presentation	30
합 계		100

교과목명	머신러닝을 위한 최적화 이론		학수번호	11511001	이수	선택	학점	3
강의시간	금5 ,금6 ,금7	강의실	AI관/지상5층/511					

과제명 및 과제작성 방법안내	제출일	제출물 유형 및 제출방법
Hand-written Homework Assignments	TBA	TBA
Class Presentation (including numerical analysis using MATLAB and Python)	TBA	TBA

* 과제지연시 패널티 기준 :

구분	교재명	저자	출판사	출판년도
주교재	Convex Optimization	Stephen Boyd	Cambridge	2004
부교재	Linear Algebra and its Applications	David C.Lay	Pearson	2015
참고자료				

강의 규정 (학습자 유의사항)

장애학생 지원내용
Students with disabilities are encouraged to contact the instructor in advance to discuss any necessary accommodations and support.

교과목명	머신러닝을 위한 최적화 이론		학수번호	11511001	이수	선택	학점	3
강의시간	금5 ,금6 ,금7	강의실	AI관/지상5층/511					

주차	기 간	수 업 내 용 및 학 습 활 동
1	03/03 ~ 03/07	Intro & Linear Algebra I
2	03/10 ~ 03/14	Linear Algebra I
3	03/17 ~ 03/21	Linear Algebra II
4	03/24 ~ 03/28	Linear Algebra II & Class Presentation I
5	03/31 ~ 04/04	MATLAB / Python - 실습
6	04/07 ~ 04/11	Optimization_part1_Optimization Basic & Convexity
7	04/14 ~ 04/18	Optimization_part2_LP
8	04/21 ~ 04/25	Midterm Exam Period (Homework)
9	04/28 ~ 05/02	Optimization_part3_Constrained Convex
10	05/05 ~ 05/09	Optimization_part3_Constrained Convex
11	05/12 ~ 05/16	Optimization for ML
12	05/19 ~ 05/23	Linear Algebra II
13	05/26 ~ 05/30	Advanced Topics
14	06/02 ~ 06/06	Class Presentation II
15	06/09 ~ 06/13	Final Exam