2024학년도 겨울방학 데이터사이언스 Bootcamp 강의주제

1. 데이터사이언스를 위한 Python 프로그래밍과 데이터 구조	2. 데이터사이언스를 위한 시스템과 C 프로그래밍
• Abstraction, Hello Python, Memory Models, and Functions Function Memory Model, Function Design, and Strings • Control Structures, Modules, and Classes, Lists and Loops • Sets, Tuples, Dictionaries, and Mutability, File I/O • Object-Oriented Programming • Computational Complexity, Searching, and Sorting • MergeSort, Algorithm Design, Testing, and Debugging • Data Structures: Arrays, Linked Lists, Stacks, and Queues • Data Structures: Trees • Data Structures: Graphs • Data Structures: Hash Tables	• Bits, Data Types, and Operations, Semi-conductor and Logic Gates • Von Neumann Model and Machine codes, Great Ideas in Computer Architecture • Hello C, Variables and Operators • Control structures • Functions • Pointers • Arrays • I/O • Structures • Linked lists
3. 데이터사이언스를 위한 수학	**4. 데이터사이언스를 위한 확률과 통계**
• Linear Algebra - Matrices, Basic operations • Linear Algebra - Basis, Rank, Linear Mappings • Linear Algebra - Norms, Inner Products & Orthogonality • Linear Algebra - Projections & Gram-Schmidt Orthogonalization • Linear Algebra - Eigenvalues, Eigenvectors, Eigenspaces, Diagonalization • Linear Algebra - Singular Value Decomposition & Matrix Approximation • Vector Calculus - Differentiation, Partial Differentiation & Gradients • Vector Calculus - Gradients of Vector-Valued Functions, • Vector Calculus - Backpropagation & Automatic Differentiation	• Probability • Random Variable • Expectation, Variance • Convergence • Statistical Inference • CDF • Bootstrap • Parametric Inference • Hypothesis Testing and p-value • Bayesian Inference

* 상기 강의 주제는 진도에 따라 변동이 있을 수 있습니다.