

To Step Forward...

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What We have Covered So Far ...

- Python programming
 - Interpreter
 - Data types, variables, and operators
 - Memory model
 - Functions
 - Control Structures and loops
 - File I/O
 - Modules
 - Classes
 - Object-oriented programming
- C programming
 - Compiler
 - Data types, variables, and operators
 - Memory model
 - Functions
 - Control Structures and loops
 - I/O and File I/O
 - Pointers
 - Structures
 - Dynamic memory allocation

What We have Covered So Far ...

- Data structures
 - Linked lists (both in Python and C)
 - Array lists (Python lists, C arrays)
- Algorithms
 - Performance evaluation (Big O and actual measurement)
 - Linear search and binary search
 - Selection sort, insertion sort, and merge sort
 - Recursion
- System basics
 - Bits, data types, and operations
 - Semi-conductor and logic gates

To Step Forward ...

- Data structures and Algorithms
 - GSDS: 데이터사이언스를 위한 컴퓨팅의 기초, 컴퓨팅 1
 - ECE: 자료구조의 기초 (2학년), 알고리즘의 기초 (3학년)
 - CSE: 자료구조 (2학년), 알고리즘 (3학년)
- Object-oriented programming (and c++)
 - GSDS: 데이터사이언스를 위한 컴퓨팅 1 (1학기)
 - ECE: 프로그래밍 방법론 (2학년)
 - CSE: 컴퓨터프로그래밍 (2학년)
- Deep neural network programming
 - GSDS: 데이터사이언스를 위한 머신러닝 딥러닝 1 (1학기), 데이터사이언스를 위한 머신러닝 딥러닝 2 (2학기), 앰비언트 인공지능 플랫폼 및 실습 (2학기)

To Step Forward ...

- Computer systems
 - GSDS: 데이터사이언스를 위한 컴퓨팅 2
 - ECE: 운영체제의 기초 (4학년)
 - CSE: 시스템프로그래밍 (2학년), 운영체제 (3학년), 멀티코어 컴퓨팅 (4학년)
- Database
 - GSDS: 데이터사이언스를 위한 데이터 관리 1, 2
 - CSE: 데이터베이스 (3학년)
- Computer architecture
 - ECE: 컴퓨터조직론 (3학년)
 - CSE: 컴퓨터구조 (2학년)

Data Science as Liberal Arts in the 21-th Century



The Students



2019-2020

- 2800 in Data 8
- 1600 in Data 100
- 500 in Prob 140
- 500 in Data 102

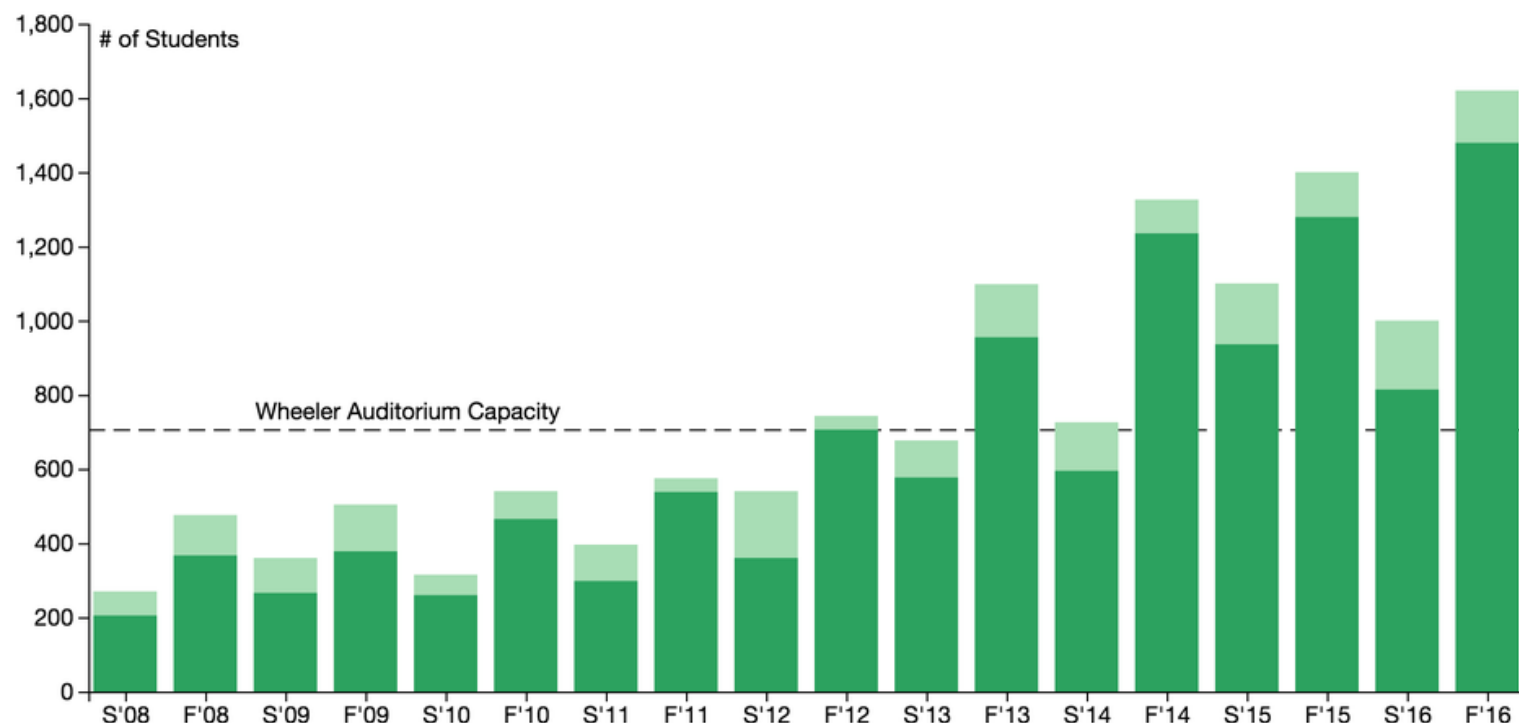
The first Data Science majors graduated in Spring 2019.

Over 300 DS majors graduated in Spring 2020, along with several hundred who got the DS minor.

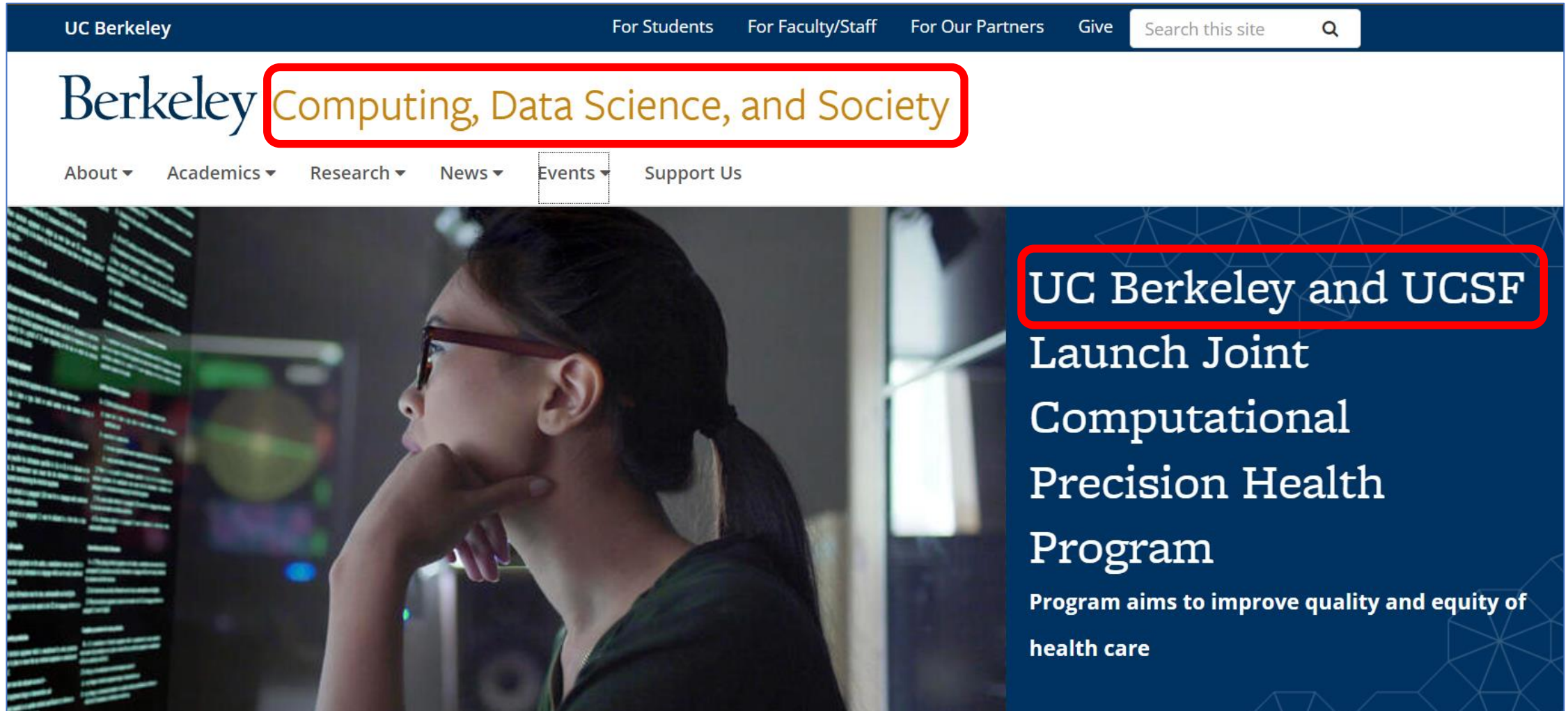
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Berkeley
UNIVERSITY OF CALIFORNIA



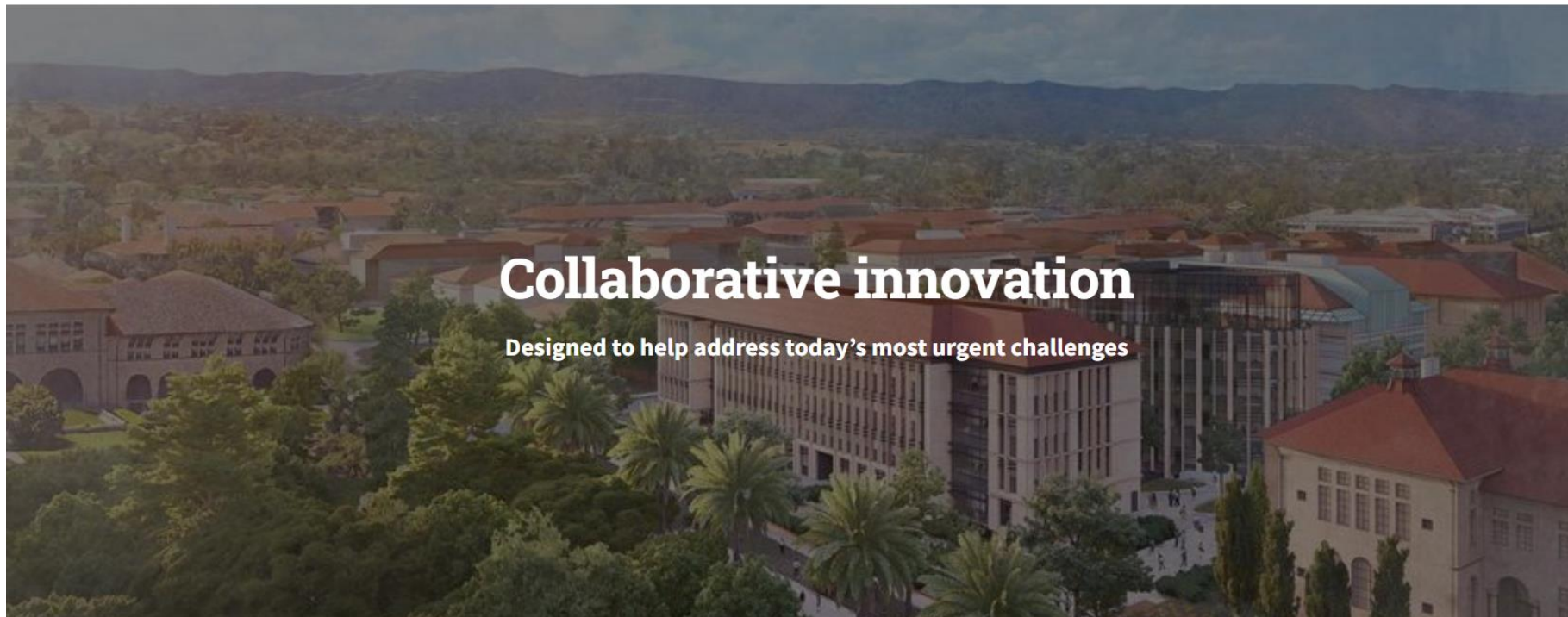
Data Science as Liberal Arts in the 21-th Century



Data Science as Liberal Arts in the 21-th Century

- <https://www.youtube.com/watch?v=2ZopVhw6t3Y>

Stanford Data Science & Computation Complex

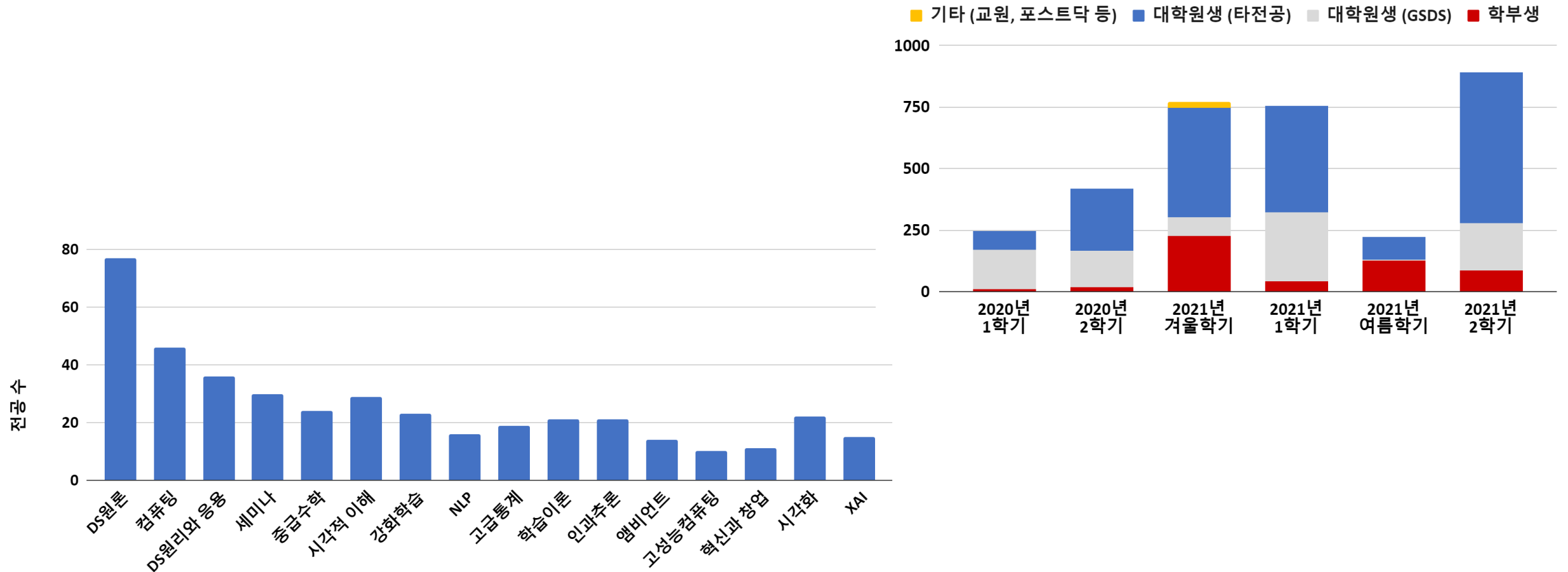


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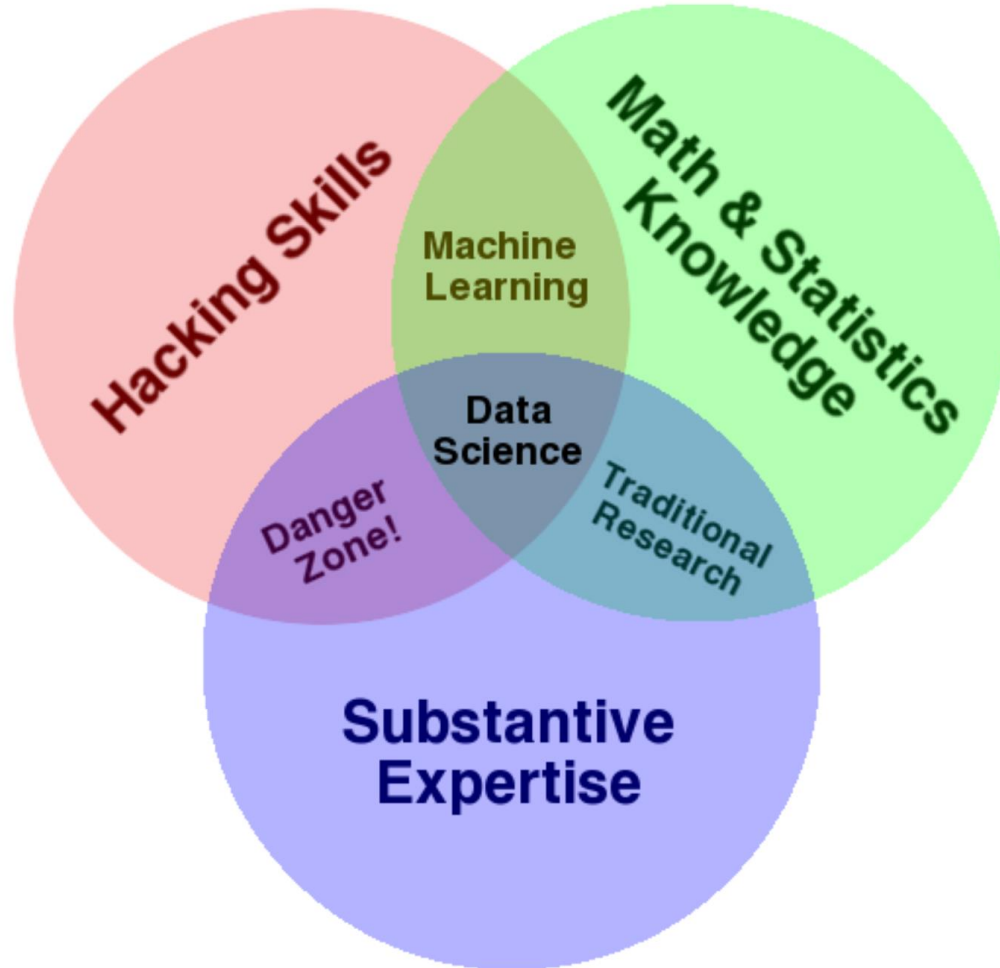


Data Science as Liberal Arts in the 21-th Century

- GSDS course statistics



Drew Conway's Venn Diagram (2010)



Again, Psychological Barrier is the Main Hurdle





Thanks!