BENJAMIN LEE

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EDUCATION

University of Washington, Computer Science, September 2019 to June 2023 (expected)

SKILLS

Languages:	Java, Python, C++, SQL
Tools:	github, IntelliJ

RELEVANT COURSEWORK

CSE 373	DATA STRUCTURES/ALGORITHMS	TCSS 343	DESIGN AND ANALYSIS OF ALGORITHMS
TCSS 371	MACHINE ORGANIZATION	TCSS 325	DISCRETE STUCTURES

PROJECTS

Project 1 DNA INDEXING

- Designed and implemented different autocomplete programs that index a lists of terms with matching suffixes using various algorithms and data structures.
- Algorithms/Data Structures Used: Binary Search, Linear Search, Ternary Search Trees
- Analyzed and compared runtimes of these implementations using asymptotic and experimental analysis.

Project 2 CONTENT MODERATION

- Designed different implementations of priority queues that can be used to moderate streams of user-generated content.
- Implementations: UnsortedArrayMinPQ , HeapMinPQ, OptimizedHeapMinPQ
- Analyzed and compared runtimes of methods within priority queue implementations using asymptotic analysis.

Project 3 IMAGE PROCESSING

- Designed and implemented two different seamfinder algorithms as well as an algorithm solving a shortest paths problem in a DAG using topological sort.
- Implementations: GenerativeSeamFinder, ToposortDAGSolver, DynamicProgrammingSeamFinder
- Analyzed and compared runtimes for finding seams across seamfinder algorithms, as well as when different shortest path algorithms are used within those seamfinding algorithms.

Project 4 KNAPSACK

- Implemented two different algorithms solving the 0-1 Knapsack problem, as well as methods to test the runtimes of the algorithms with different sized inputs.
- Implementations: DynamicKnapsack, BruteForceKnapsack
- Analyzed and compared runtimes of Knapsack algorithms using experimental analysis.