Instructor Videos

The CSUF Computer Science Department, and specifically Dr. Doina Bein, has created a set of video tutorials to supplement the topics covered in this course. If you are struggling with a particular topic, or just want to reinforce your understanding, hearing the information from a different viewpoint can sometimes help. Note that some of the coding techniques shown are somewhat outdated and have been replaced with C++17 Modern C++ techniques.

C++ Review

- Welcome to class & reviewing arrays
- Review pointers
- Reviewing dynamic variables and arrays
- Review functions (part 1)
- Review functions (part 2)
- Review classes (part 1)
- Review classes (part 2)
- Review classes (part 3)
- Review of C concepts - integer types
- Review of C concepts - floating point types
- Review of C Concepts (variables)
- Review of C Concepts (pointers - part 1)
- Review of C Concepts (pointers - part 2)

Sequential Containers

- Class FixedVector (aka Bounded Vector)
- Algorithm Complexity Analysis
- Linked Lists (part 1)
- Linked Lists (part 2)
- Doubly Linked Lists (part 1)
- Recursive functions
- Recursive functions for linked lists
- Vectors and Amortized Analysis

Iterators

- Container classes and iterators

Container Adapters

- Stacks (part 1)
- More on stacks
- Queues
- More on queues

Associative Containers

- Trees (part 1)
- Trees (part 2)
- Data Structure Map
- Binary Search Trees (part 1)
- Binary Search Tree (part 2)
- AVL trees (part 1)
- AVL trees (part 2)

Unordered Containers

- Hash tables (part 1)
- Hash tables (part 2)
- Hash tables (summary)
- Graphs (basic notions)
- Graphs (representations)
- Graph traversals (part 1)
- Graph traversals (part 2)