Data Structures

Introduction

CS 225

August 21, 2023

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UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN

Department of Computer Science

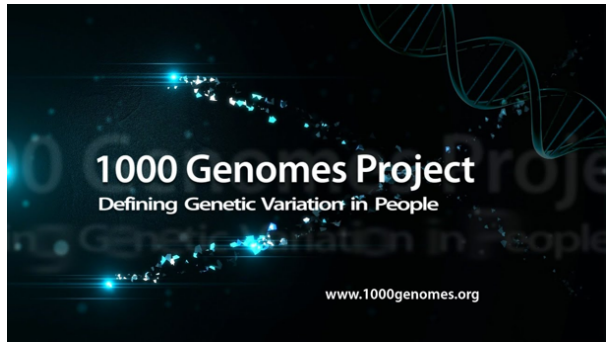
Learning Objectives

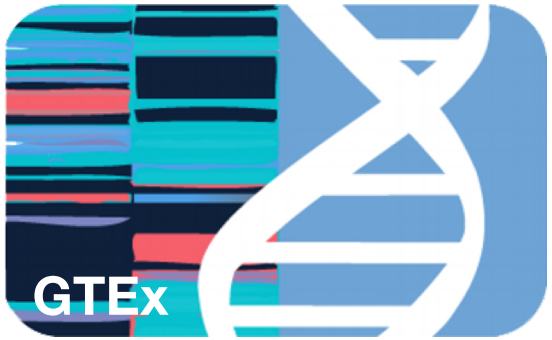
Introduce course staff

Introduce course policies

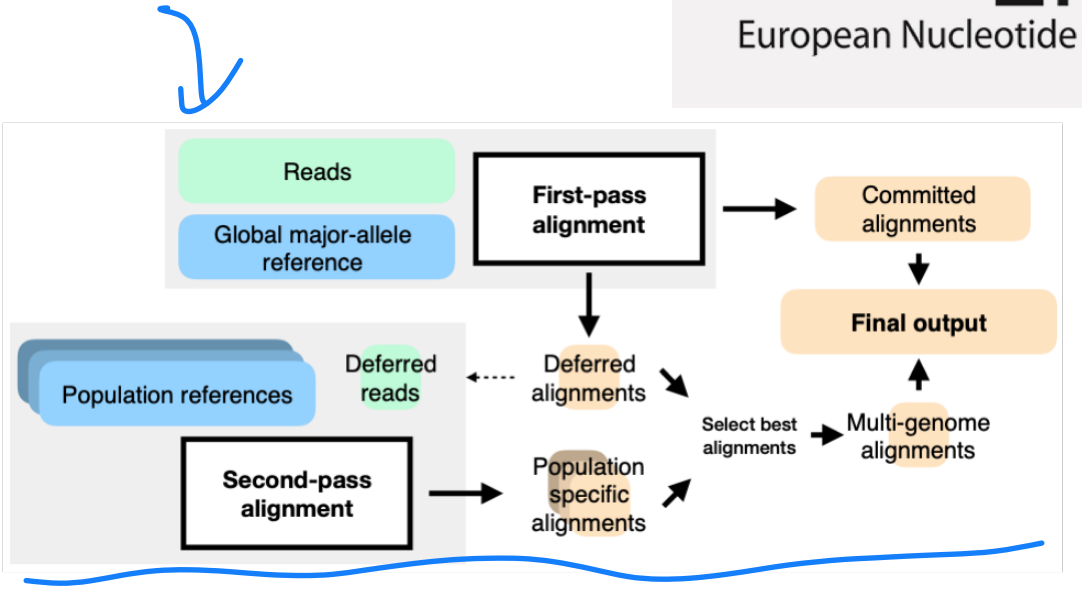
Introduce course goals and general structure

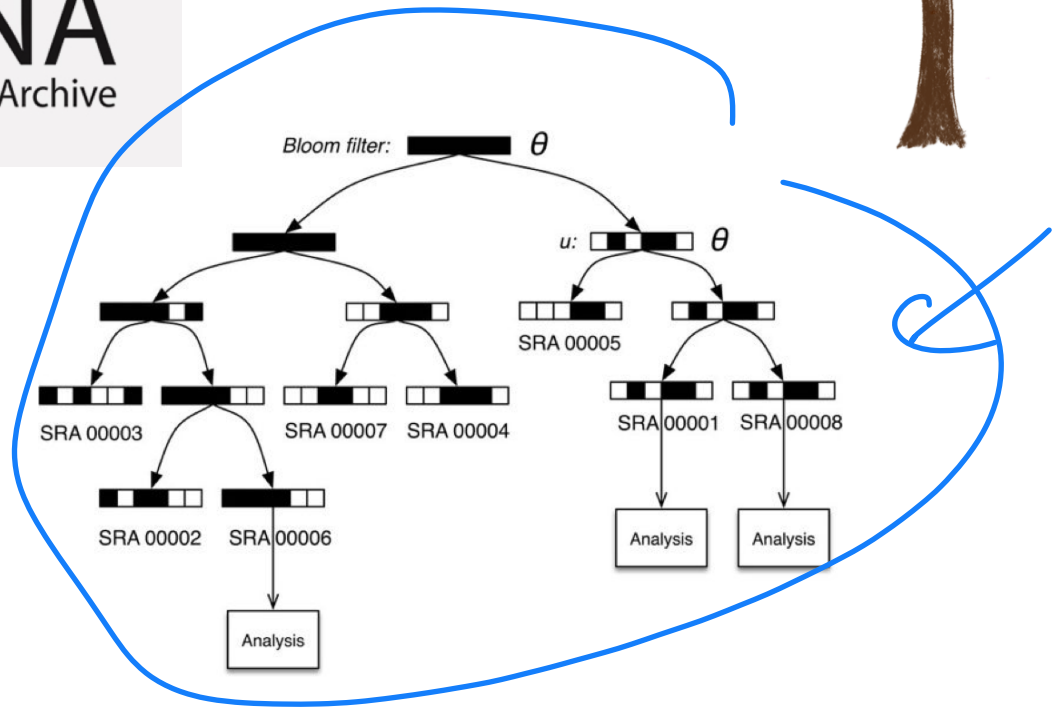
Brad Solomon





ENA
European Nucleotide Archive

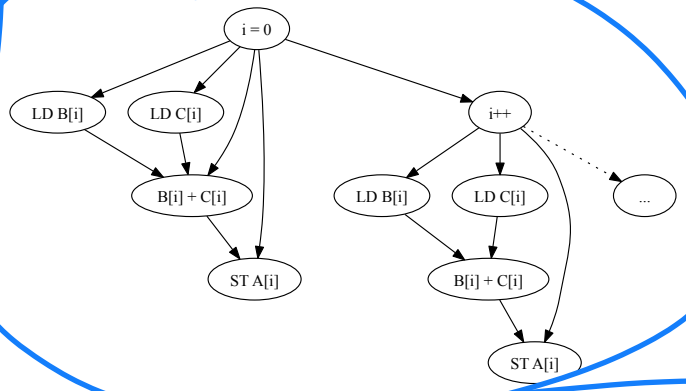


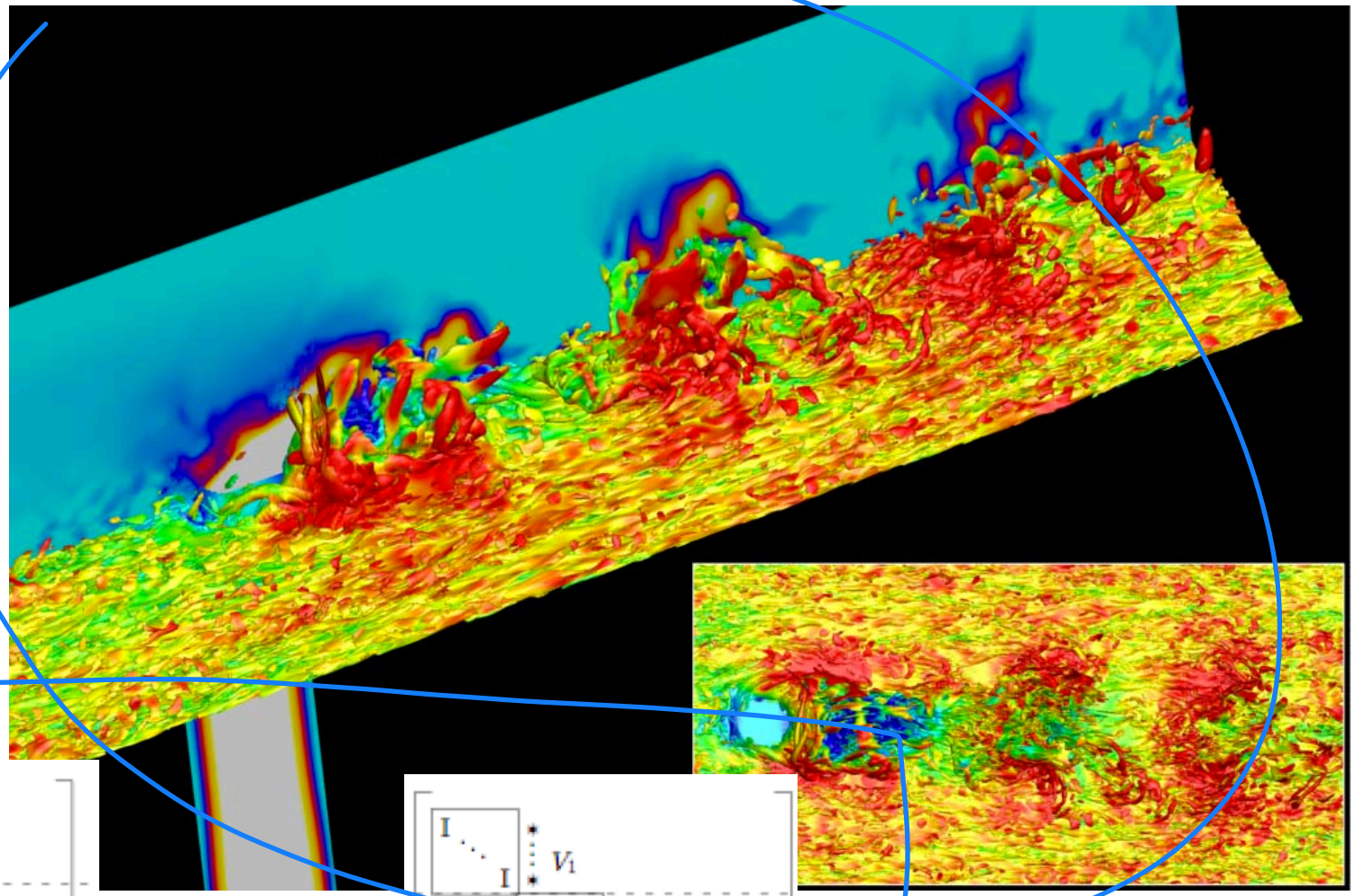


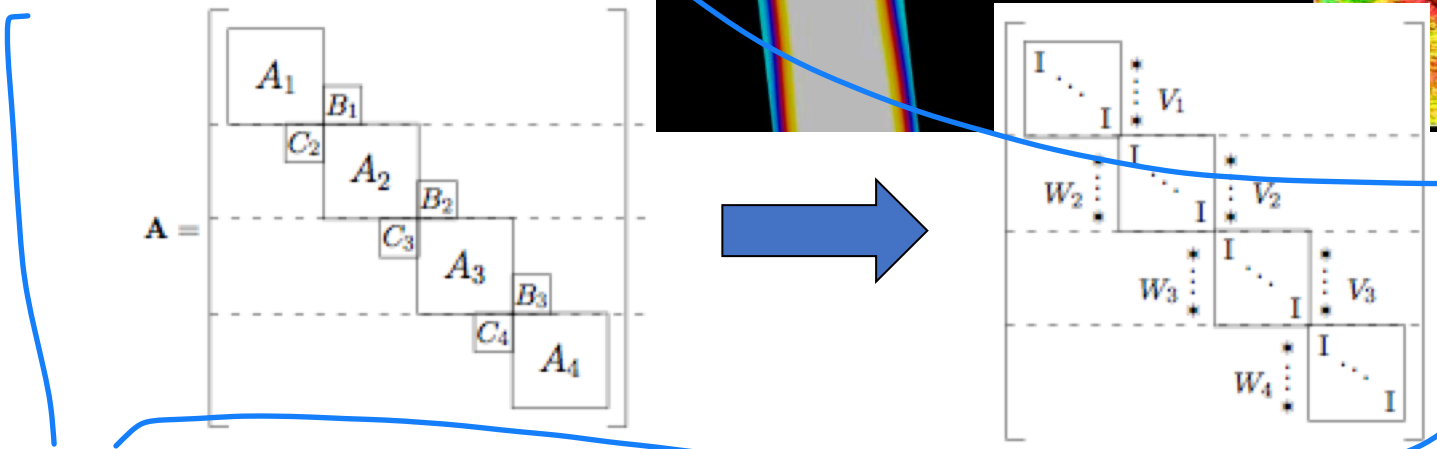
Fast search of thousands of short read sequencing experiments. Brad Solomon and Carl Kingsford. *Nature Biotech* 2016.

Reducing reference bias using multiple population reference genomes. Chen et al. *Genome Biology* 2021

G Carl Evans

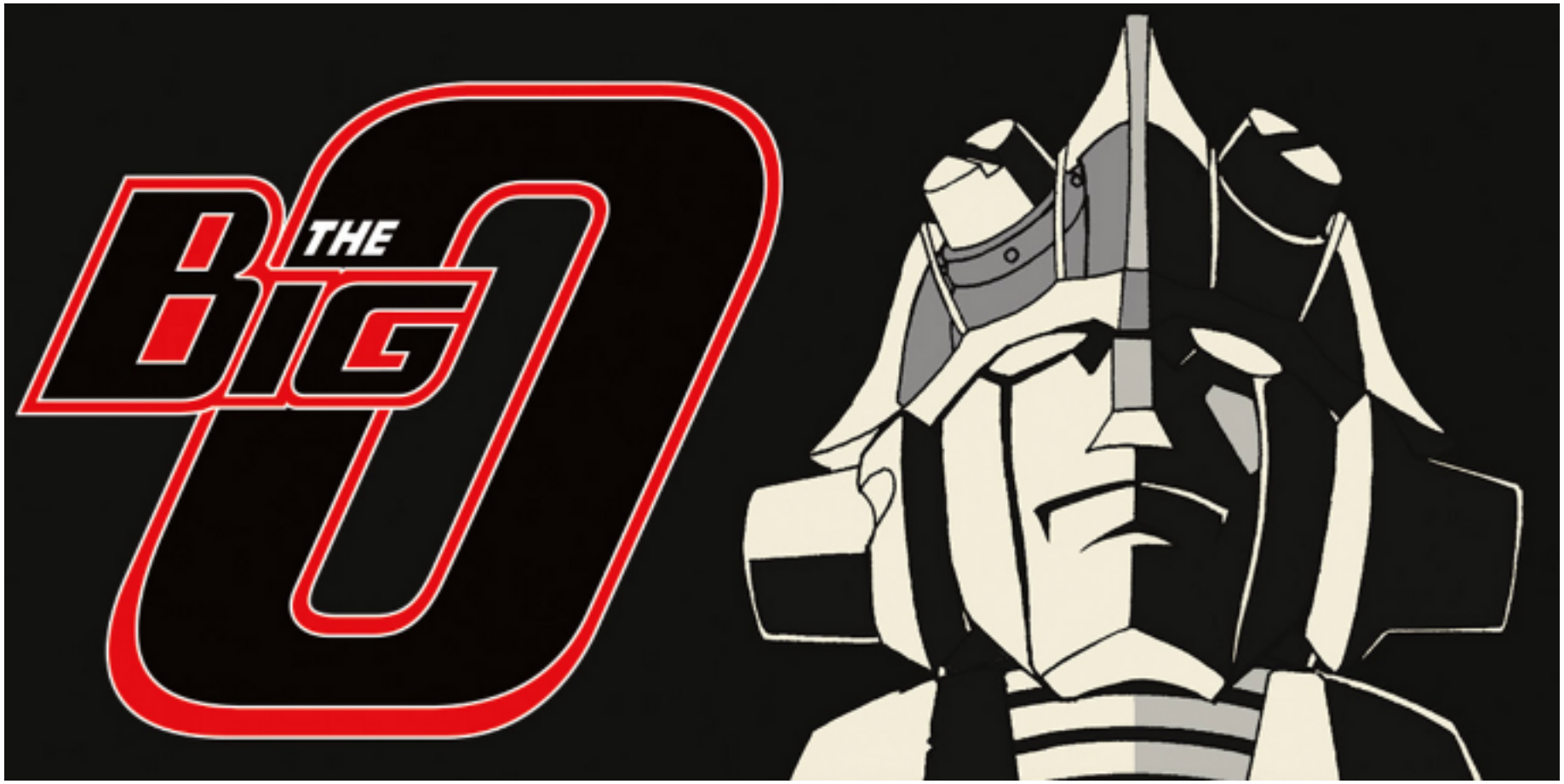

i = 0
LD B[i]
LD C[i]
i++
B[i] + C[i]
LD B[i]
LD C[i]
...
ST A[i]
B[i] + C[i]
ST A[i]



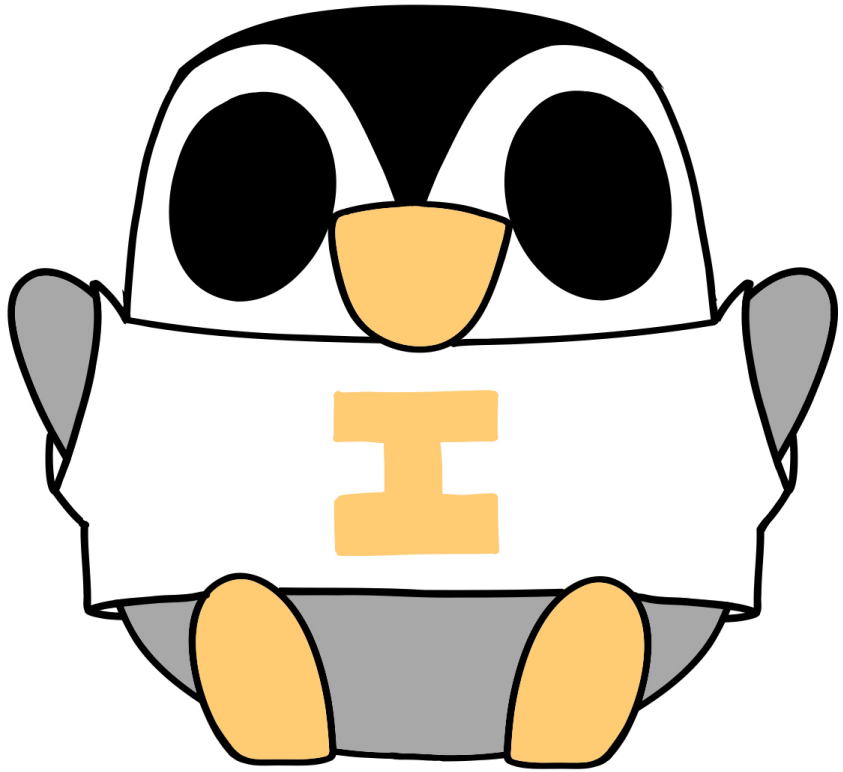

A =
A_1
B_1
C_2
A_2
B_2
C_3
A_3
B_3
C_4
A_4

I
V_1
W_2
V_2
W_3
V_3
W_4

CS 199-225: Performance Beyond

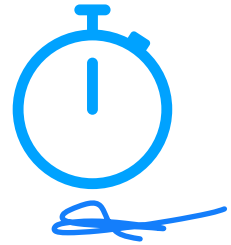


Thierry Ramais



CS225 STAFF

How to contact us?



Admin Email: cs225admin@lists.cs.illinois.edu

Make sure the subject is meaningful!

It may take a day or two to get a response.

Discord: https://discord.gg/YuEwhnR

Don’t DM course staff on Discord

Be respectful to one another online

CS 225 — Course Goals

Understand foundational data structures and algorithms

Justify appropriate algorithms for complex problems

Improve coding, debugging, and brainstorming skills

Everything about CS 225

https://courses.engr.illinois.edu/cs225/

Information on:

- Staff
- Communications
- Lab Sections
- MPs
- Exams
- Grading
- Academic Integrity

Discord Server

Link can be found under Course Information.

Use Discord to connect with peers

Use Discord to ask questions during lecture

DO NOT use Discord to post inappropriate content

DO NOT use Discord to DM course staff

DO NOT use Discord to spam or harass other students

Plagiarism Policy

Don’t share your code with anyone! Ever!

Don’t use or look up code solutions from any source

Carefully consider how you discuss problems with peers

Infractions will result in 0s on the assignment AND a full letter grade drop at the end of the semester.

All infractions will be reported through FAIR and remain on your permanent record.

Grading — Point Distribution

Category	Contribution	Notes
Machine Problems	360	60 points each
Lab Assignments	120	10 points each
Exams	360	60 points each
Final Exam	160	

All MPs have a one-day late policy for 93% credit

There are no extensions for labs

Grading — Final Grades

Points	Grade	Points	Grade	Points	Grade
[930, ∞)*	A+	[930, ∞)*	A	[900, 930)	A-
[870, 900)	B+	[830, 870)	B	[800, 830)	B-
[770, 800)	C+	[730, 770)	C	[700, 730)	C-
[670, 700)	D+	[630, 670)	D	[600, 630)	D-
		(600, 0]	F		

* An A+ requires both a minimum amount of points and the support of one or more course staff members who have found some part of your work exceptional.

Extra Credit Opportunities

MP Extra Credit Submission (40 pts)

Problems of the day (40 pts)

Extra Credit Project (40 pts)

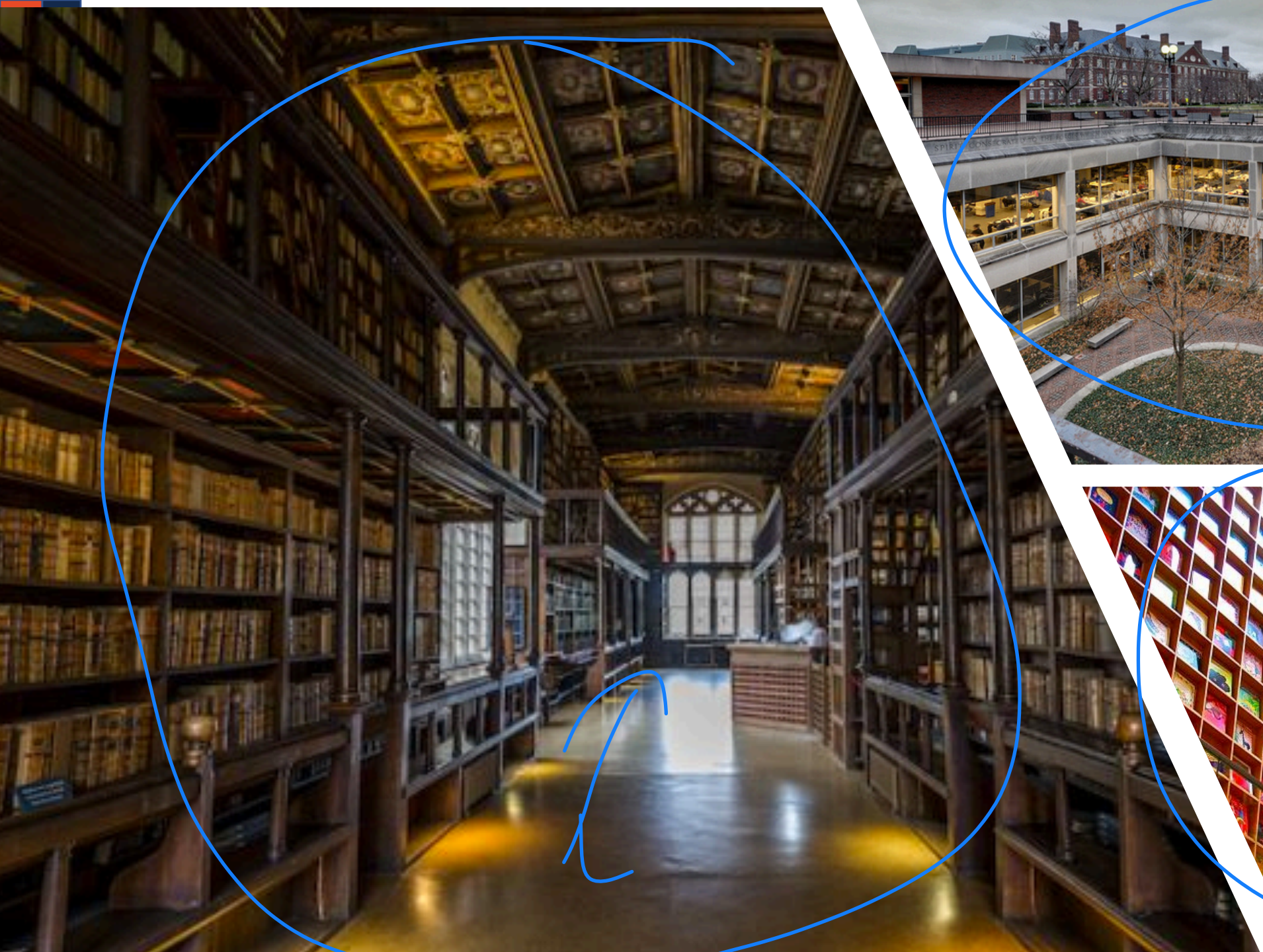
Extra credit is capped at 100 points.

Other Syllabi Policies

Adhere to the CS Values and Code of Conduct

Your mental and physical health is important

What is this course about?



Course goals

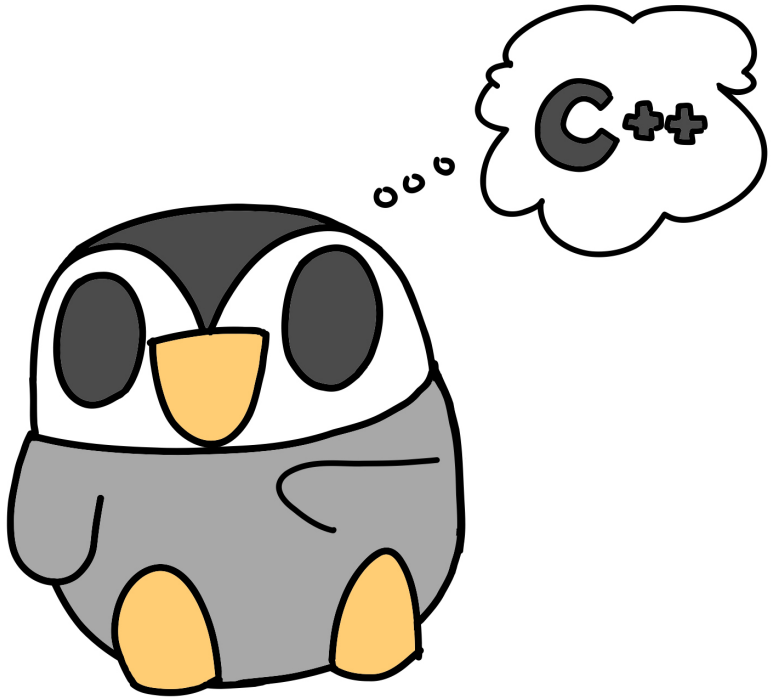
Conceptualize commonly used data structures

Implement intermediate difficulty problems in C++

Justify design decisions when building algorithms

Improve your foundation of CS theory

What about C++



Lectures from Previous Semesters Covering C++ Available Here
https://mediaspace.illinois.edu/playlist/dedicated/177553201/1_s10ctiib/1_z2cz05fi

Exam 0 (August 29 — 31)

An introduction to CBTF exam environment / expectations

Quiz on foundational knowledge from all pre-reqs

Practice questions can be found on PL

Topics covered can be found on website

Registration starts August 24

(Optional) Open Lab This Week

This week's lab is open office hours

Focus is making sure your machine is setup for semester

Installation information available on website