



CS 225

Data Structures

Wade Fagen-Ulmschneider

Introduction

Wade Fagen-Ulmschneider – CS PhD

Academic Interests: data discovery/visualization, systems programming, education worth sharing, and magic fairy dust

Eric Shaffer – CS PhD

Academic Interests: computer graphics, scientific visualization, and scientific computation

Course Staff:

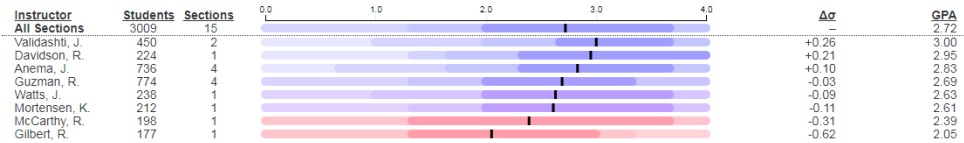
You:

My Passion: Data Discovery

Diversity at Illinois:

GPAs at Illinois:

MATH 221: Calculus I

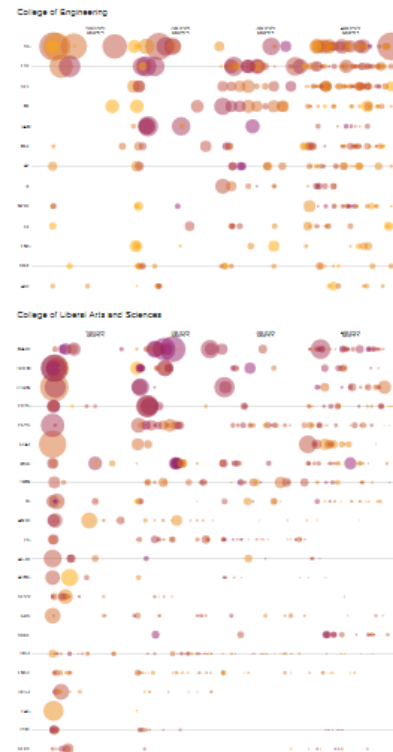
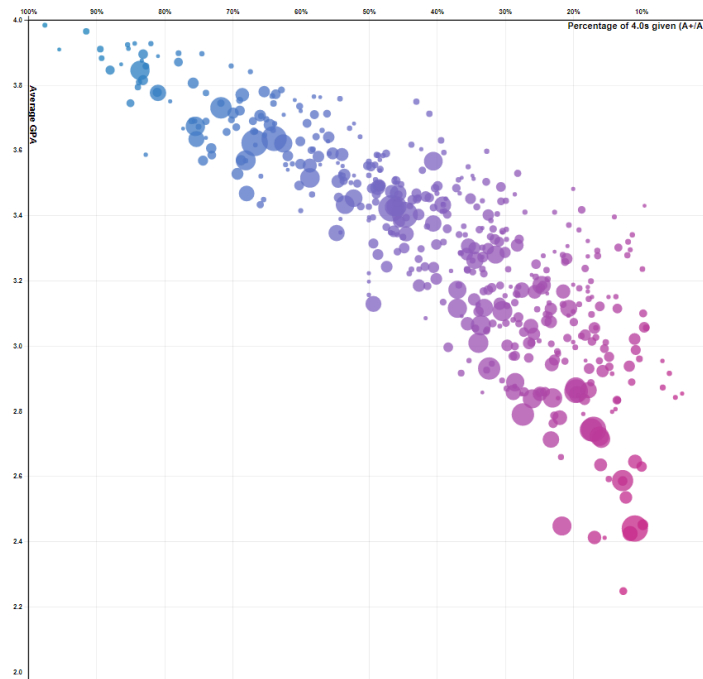


Legend



Instructors with average grades significantly lower than the average grade for a course have increasing red hues.

The darkest shading shows the median grades in a course, with each lighter showing grades further from the median.



Department of Computer Science

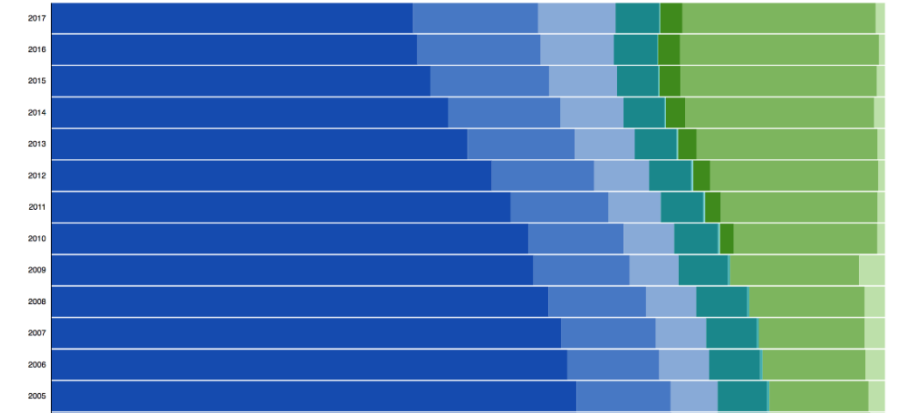


Legend

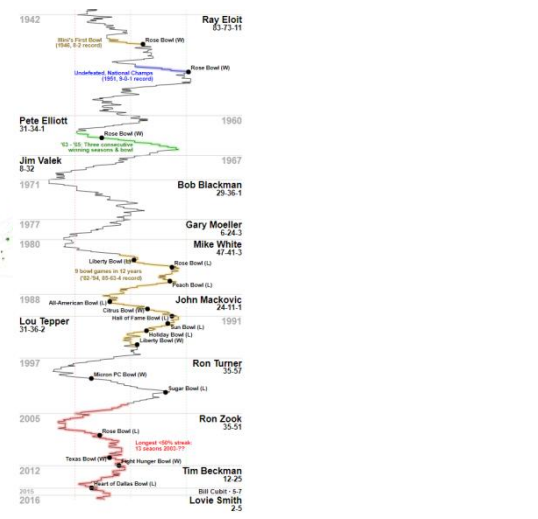
- White
- Asian American
- Hispanic/Latino
- Black
- Native American
- Hawaiian/Pacific Islander
- Multiracial
- International
- Unknown

College of Engineering in

- Aerospace Engineering
- Agriculture & Biological Eng.
- Biomedical Eng.
- Bioinformatics
- Bioinstrumentation
- Civil Engineering
- Computer Engineering

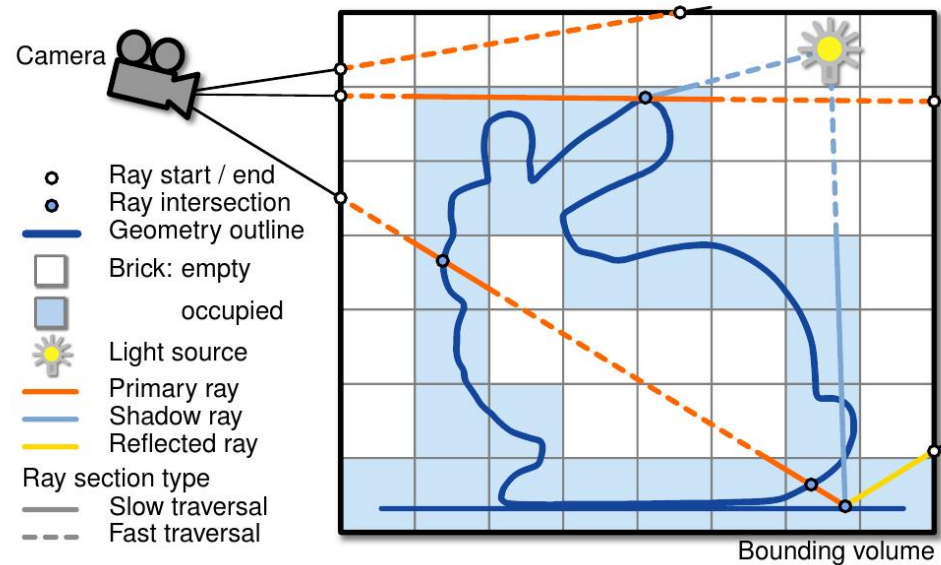
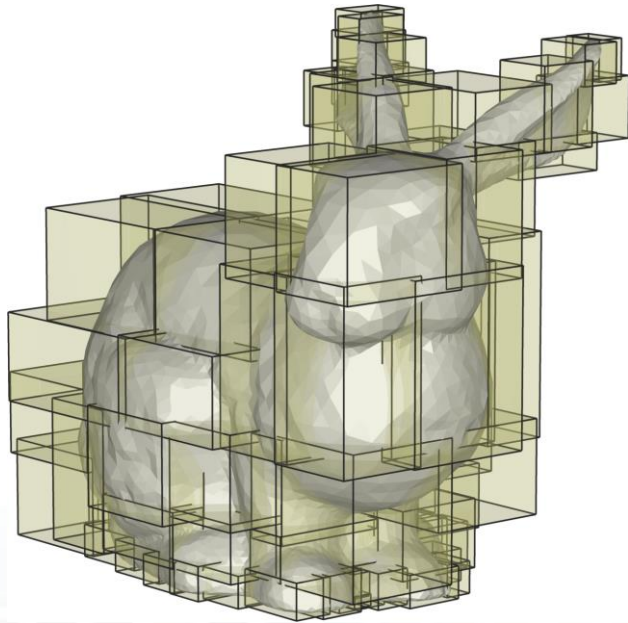


And others:



Geometric Data Structures for Computer Graphics

CS 296: Honors Section for CS 225



Three programming assignments

Implement a simple ray tracer

Accelerate the ray tracer using two different data structures

Everything about CS 225

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

Information on:

Staff

Communications

Lab Sections

MPs

Exams

Grading

Academic Integrity



What is this course about?





ECE 220

CS 126

CS 125

CS 225

CS 173

MATH 213

Variables in C++

```
int myFavoriteInt;
```

```
char grade = 'A';
```

```
double gamma = 0.653;
```

```
Cat fiona, mia;
```

```
Cube rubix;
```

```
Person wade;
```



Encapsulation

Encapsulation

`sphere.h`

`sphere.cpp`

```
1 #ifndef SPHERE_H           sphere.h
2 #define SPHERE_H
3
4 class Sphere {
5     public:
6
7
8
9
10
11
12     private:
13
14
15 };
16
17 #endif
18
19
20
```

sphere.cpp

```
1 #include "sphere.h"
2
3 double Sphere::getRadius() {
4
5
6 }
7
8
9
10
11
12
13
14
15
16
17
18
19
20
```

sphere.h

```
4 class Sphere {
5     public:
6         double getRadius();
```