# CS:2230

# Computer Science 2

# Data Structures

## More informal intro

# Instructors

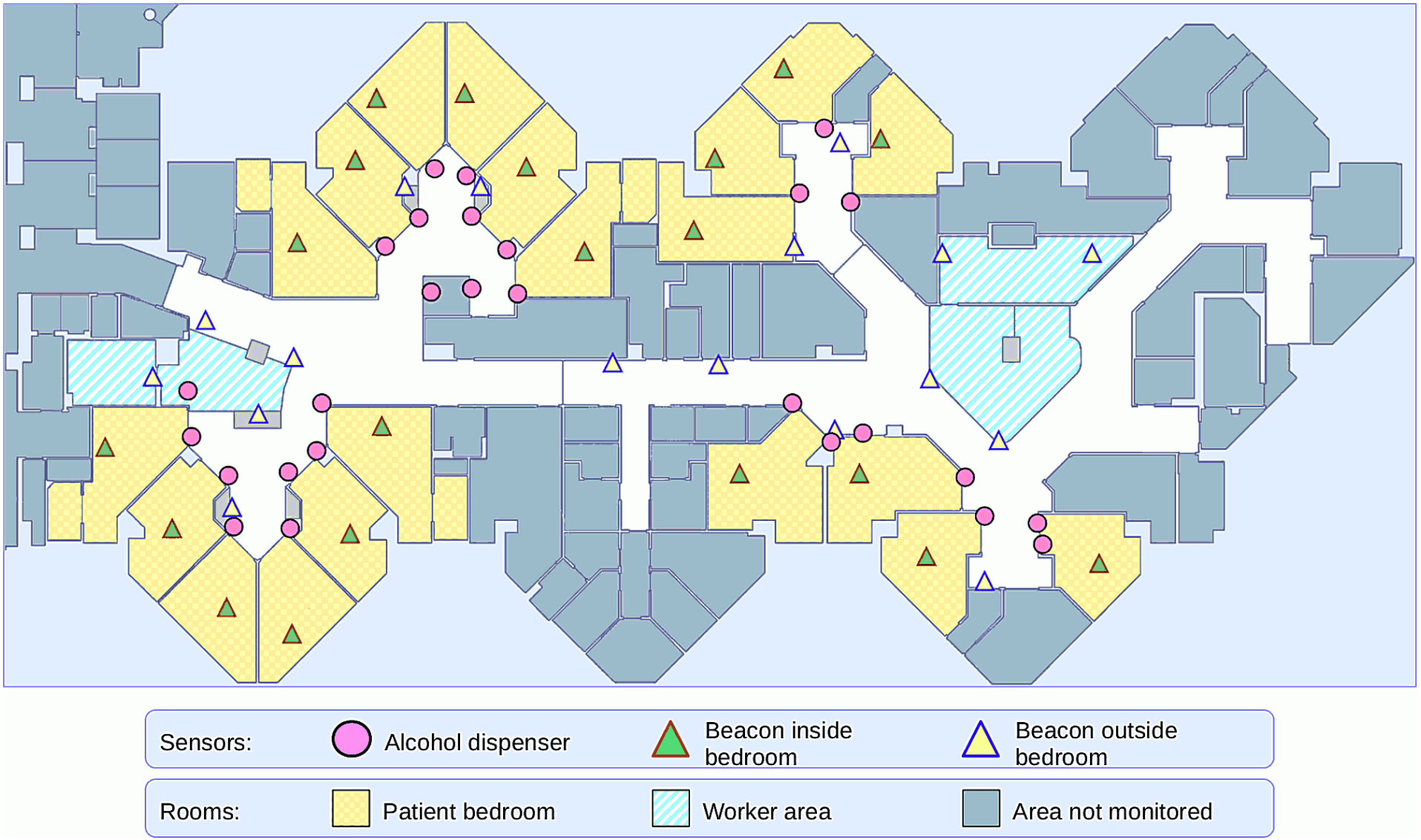
- The prof: **Mauricio Monsalve**
  - Mauricio, Maurice, Morris, or just Mœ
  - “Mon-Slave” is very, very wrong
  - “Mons-Alv” is ok (or Mons-Alf)

- The TAs:
  - **Richard Blair**
  - **Shivam Tomar**

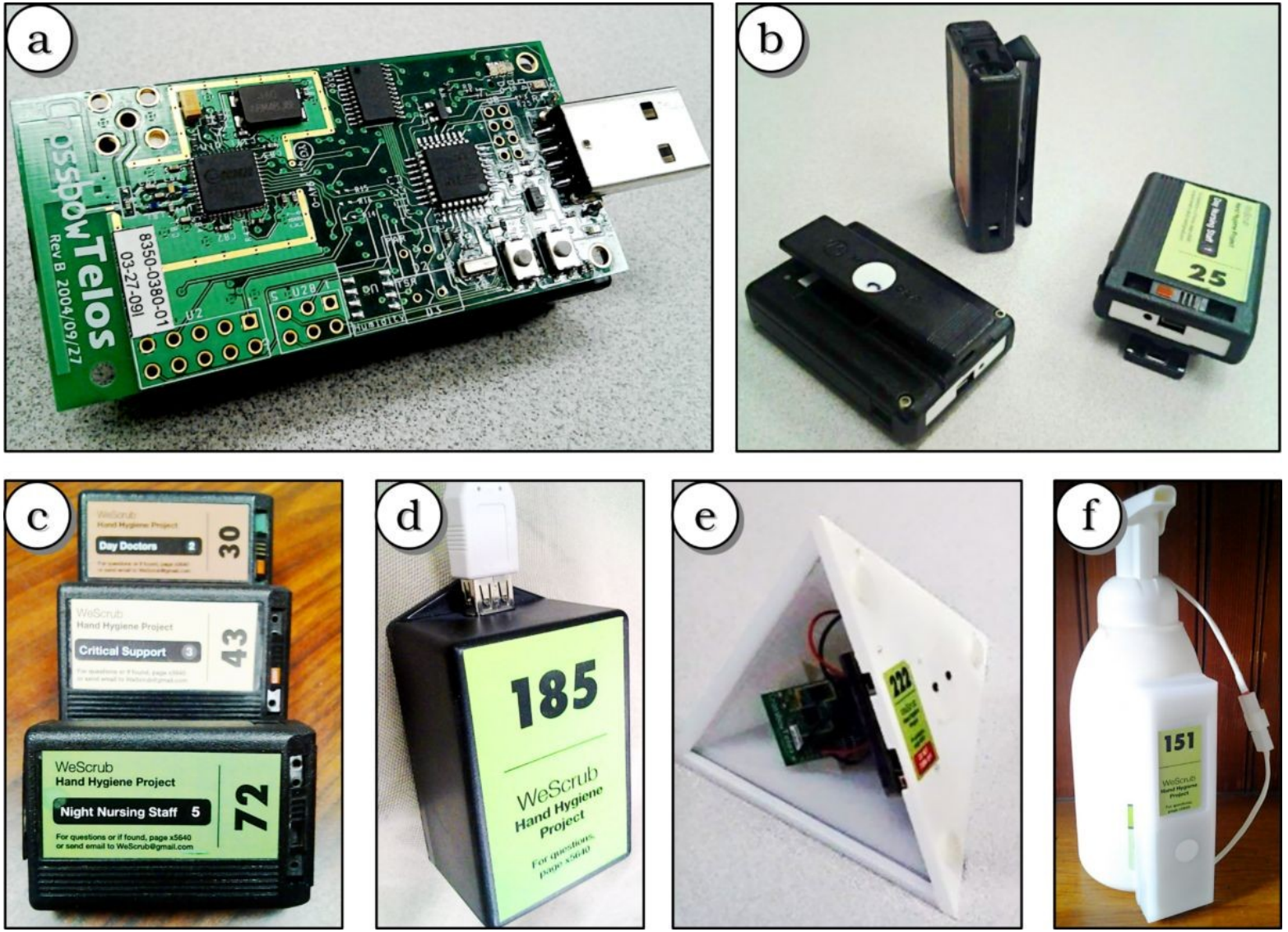
# About the prof

- From Chile
  - It's far to the South
  - North of Antarctica though
- Formally CS all the way to PhD
  - Also have some bg in business

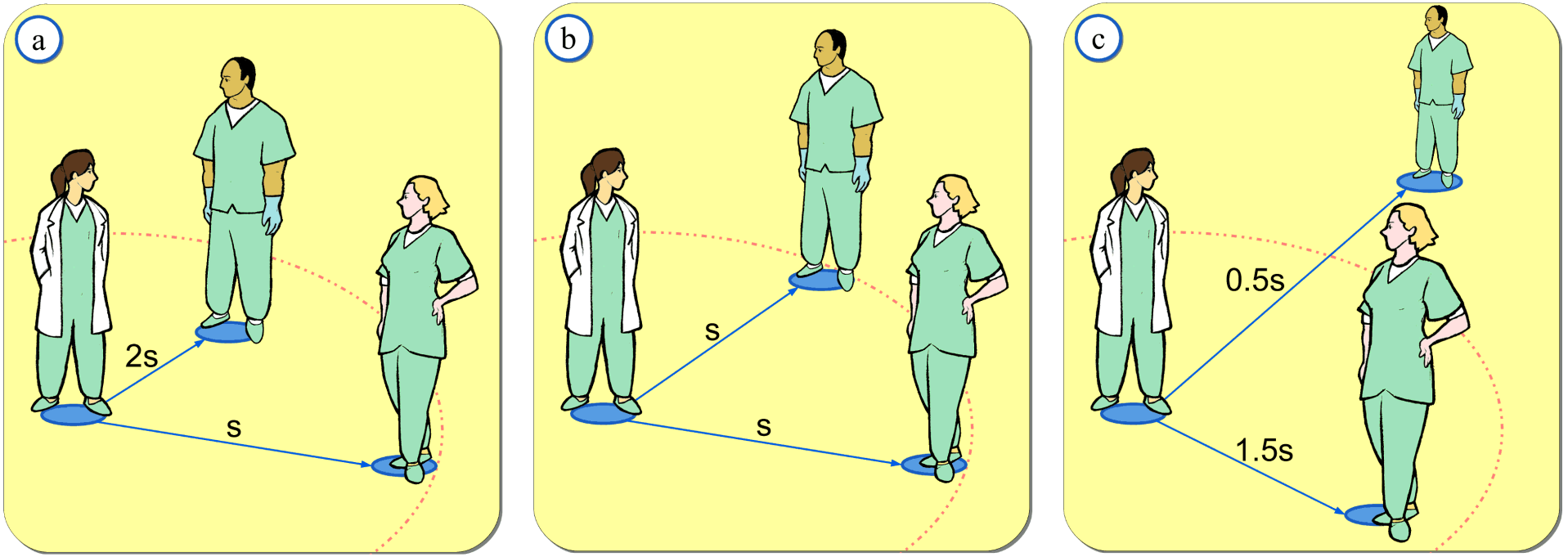
# My research


Sensors:
Alcohol dispenser
Beacon inside bedroom
Beacon outside bedroom
Rooms:
Patient bedroom
Worker area
Area not monitored

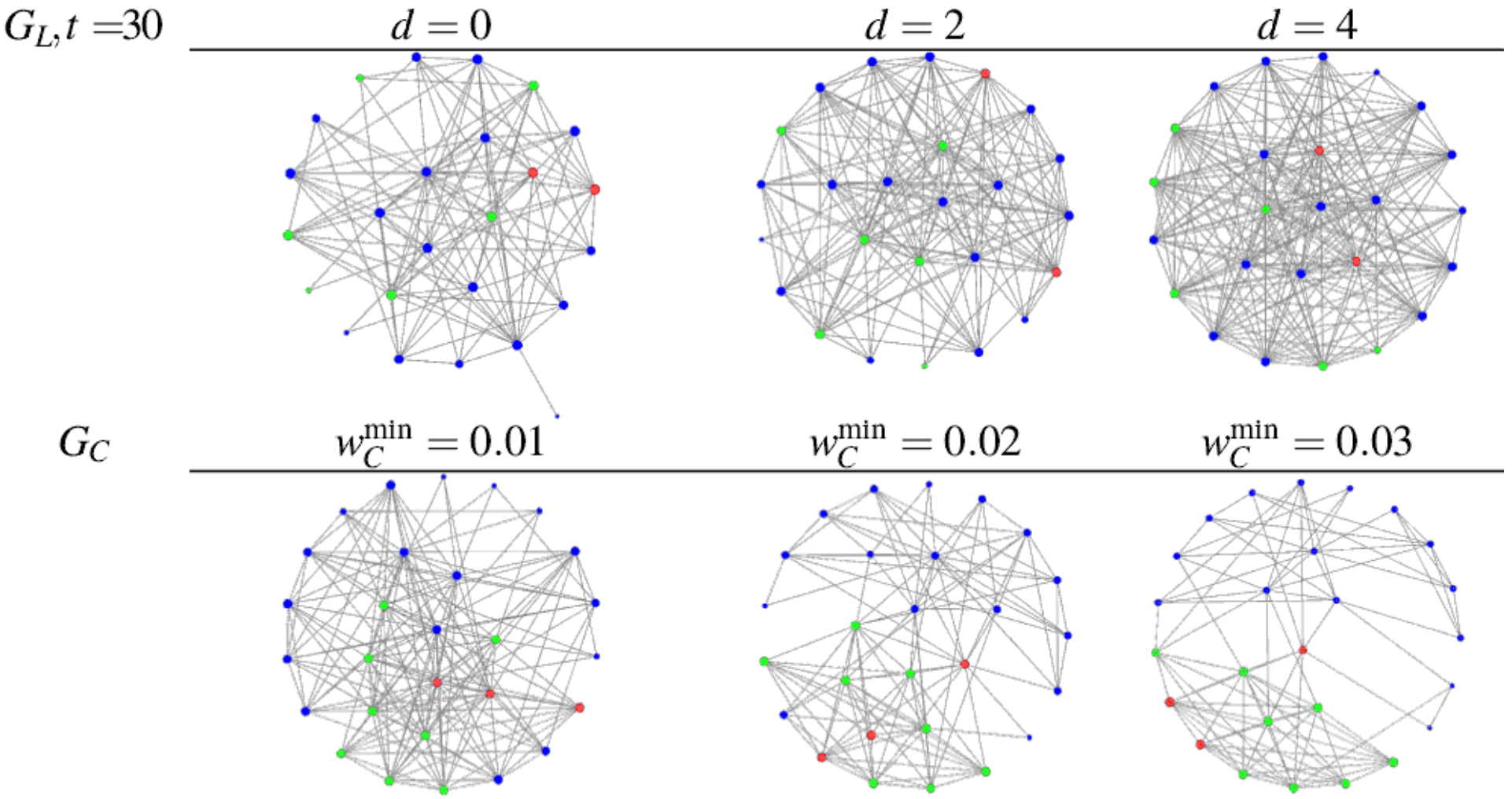
# My research


a
b
c
d
e
f
Rev B 2004/09/27
8350-0380-01
03-27-09I
25
WeScrub
Hand Hygiene Project
Day Doctors 2
30
Critical Support 3
43
Night Nursing Staff 5
72
For questions or if found, page x5640
or send email to WeScrub@gmail.com
185
222
151

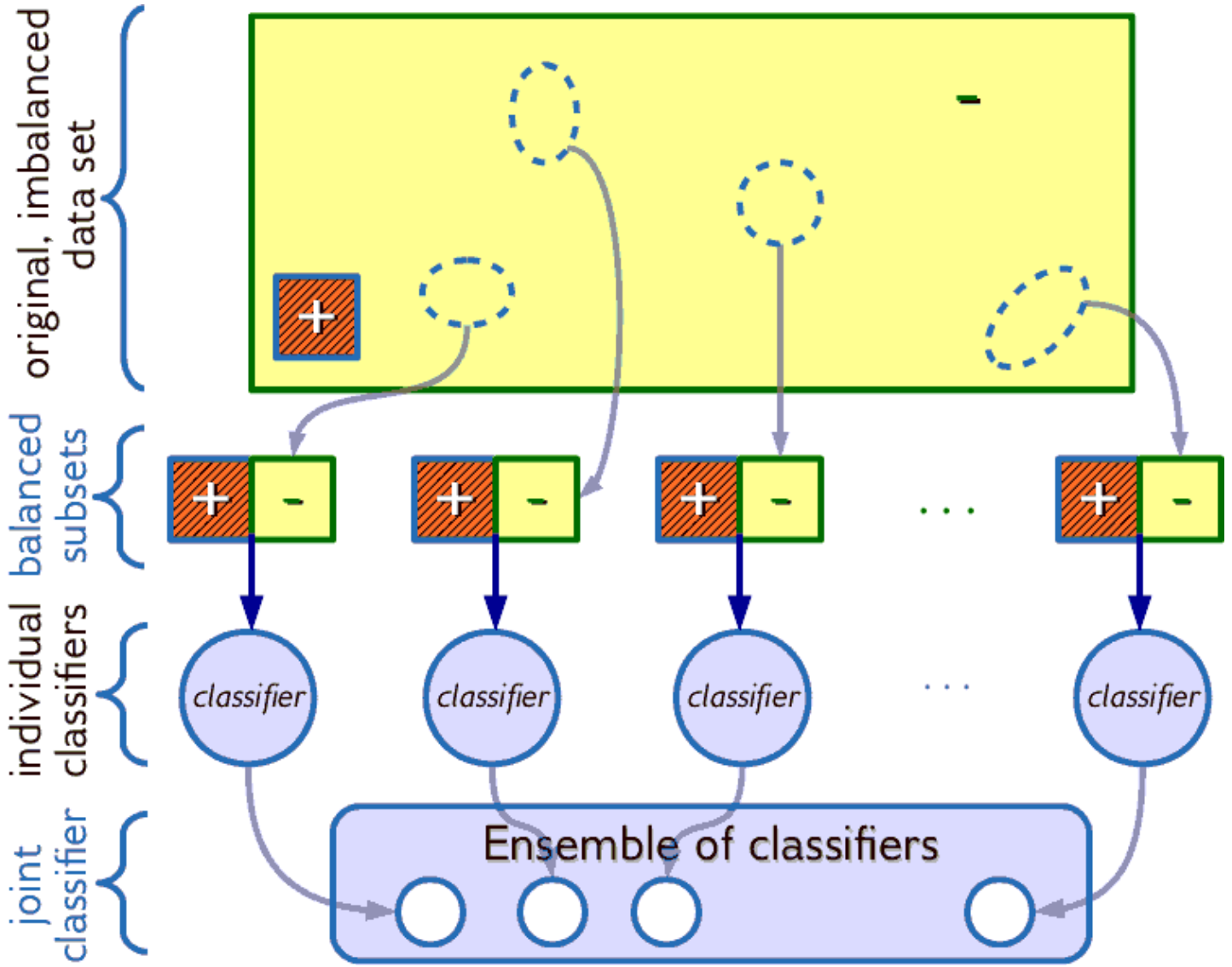
# My research



# My research



# My research


original, imbalanced data set
balanced subsets
individual classifiers
joint classifier
+
-
classifier
Ensemble of classifiers

# Description

This is the second in the sequence of core undergraduate computer science courses and is required for all computer science majors and minors. It builds on the first course, Computer Science I: Fundamentals (CS:1210 / 22C:16) and is concerned mainly with the design and implementation of data structures, algorithms for accessing and manipulating data structures, and the application and uses of data structures. Java is the programming language of choice for this course.

# In practice

- Get your Java fix!
- Improve, reinforce programming skills
- Learn about **data structures**

**Data structures are ESSENTIAL in everyday SE projects**

# DIVMS account

- You should get your CS/DIVMS account
  - You can use the Lab resources
  - Lab = 301 MLH
- We will use **Netbeans**
  - http://www.oracle.com

# Evaluations

- **Exams (45%):**
  - Two midterms, one final, each 15%
- **Homework (40%):**
  - About 5, programming intensive
- **Quizzes (15%):**
  - Random, more likely if attendance suffers
  - Could include programming

# On homeworks

- Average announced 1.5 weeks prior submission time
- Submit to ICON—no emails
- No late submissions
  - Unless extreme cases
- Didn't finish? Submit whatever you have
- Want you to *eventually* code *cool stuff*

# On exams and quizzes

- Not everyone will receive the same questions
  - Slightly different, look similar
  - Same difficulty
  - **To prevent cheating**
- Quizzes are for 10 mins tops
  - Could occur on discussions
- Exams favor difficulty over length
  - Will compile exercises

# Missing evaluations

- Quizzes are not retaken
  - They will receive the *empty* grade

- Strong medical reasons for homework and exams
  - Have formal medical excuse
  - Solicited permission from school

# On cheating

Cheating = instant F

# On grading

- The scale is not yet predefined
  - But I dislike curves
- Score-wise, lenient to get an A
  - But recall: there'll be difficult problems
  - Mind + effort = A+
  - Homework are best shot at rising grade

# Motivation

# What are data structures

- Organizations, arrangements of data
- To access or process *conveniently*
  - Quick access, for example
  - Low space (e.g., compressed structures)
  - Error tolerance or control
- Often consider operations
  - Read, access data
  - Add, delete, update data

# Why study them?

- They are *super* important

- Choosing or designing the right data structures for a project is **essential**
  - Databases
  - Search engines
  - Videogames
  - Data mining
  - Artificial intelligence

# Some stories

- Sensor data analysis
- Smart satellite
- Quake