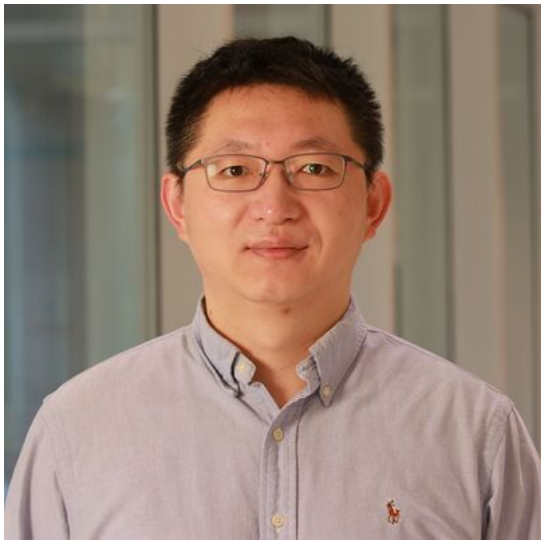
CS4243W Capstone Design

What to Expect

https://go.gwu.edu/cscapstone

Who are we?

Timothy Kim



Xiaodong Qu

Josh Shapiro (BS '17)

Plus: Victor (WID TA) and 10+ GW CS alumni who will serve as project mentors

Who are you?

Tell us:

- Your name
- What you did over the summer (something fun and something work/educational)
- Whether you have a team or are looking for a team

What is Senior Design?

Apply all that you have learnt (and more!) to conceptualize, design and build a project over two semesters

- Design
- Implementation
- Algorithms

Learn and use (industry standard) software engineering methodologies/tools

What else is Senior Design?

Writing

Public Speaking

Career prep

Time Management !

Culmination of your degree!

What happens this semester / year?

Fall:

- Form a team and propose a project
- Learn necessary technologies and build preliminary prototypes
- A few lectures on software engineering methodologies
- Work with alumni/faculty mentor to plan project and weekly tasks
- Write and speak about your project
- Alpha demo at end of semester

Spring:

- Keep building cool stuff!
- Final demos and presentations

What happens each week?

Tuesday class:

- Regularly scheduled lecture will **not** meet most weeks
- Each team will set up online meetings to meet with faculty advisor to check in on progress
- Instructors will coordinate times so each team can come as a group

Wednesday class:

- 6:10-7:30: lectures on software engineering methodology
- 7:30-8:40: work with teammates on project or meet with mentor

Weekly standup meetings and monthly sprint planning with mentor

What will I be graded on?

1. Project board: progress, teamwork, ability to stay on schedule, technical mentor meetings
2. Slack: communicate with mentors, documented feedback
3. Github repo: steady commits/pull requests, code reviews,..
4. Writing assignments: mostly in fall
5. Presentations: we will look at overall improvement for the final grade in this category
6. Participation & initiative
7. Several project demos and Final demo/presentation
    - Quality and technical challenge of the project will factor into the grade

Demos, i.e., Project Checkpoints

Several “demos” are required through the two semesters

1. Demo 1 – Alpha Prototype review (40% demo); End of Fall semester
2. Demo 2 – Beta Prototype review (60% demo) ; early Spring semester (Feb 1st week)
3. Demo 3 – Prototype prelim demo (80% demo) with full end to end system; (before Spring break)
4. Mock Demo – plan what your final demo will cover (2 weeks before final)
5. Demo 4 – Final Project Demo (last week of Spring semester)

Course Requirements: Teams

Teams: 4 persons per team

- 2-3 person teams allowed for faculty research with faculty approval (been working on the project already)
- Can be from different lecture sections

Submit team info in next week

- No team – instructors will help form teams of remaining students

Course Requirements: Project Criteria

Project MUST have:

- **Technical** components with significant software design/implementation
- **Algorithmic** component with some interesting core logic, methods, or problem-solving procedures

Examples of what it **cannot** be:

- Database project similar in complexity to CS2541 project
- Game design akin to the course project (unless it has new algorithms etc.), etc.
- A direct implementation of an algorithm covered in a book/class

Must define components that each team member will be responsible for

- And each component must satisfy the requirements !

Tips for Success

“own” your project

Be enthusiastic about learning new skills (hard and soft)

- Writing and presenting are critical for your career growth too!

This is the one (only!) opportunity for you to bring together everything you have learnt AND do it while working on your own idea/product

- View this as a holistic learning experience

What next?

ASAP:

- Join Slack and complete Student Info form

Wednesday Night

- Lecture by Josh on software engineering methodologies

Next week

- Form teams/projects
- Start creating!

What now?

Read the project criteria on the course website

Form a team with other students (4 students if possible)

Think about project ideas

- You will need to submit 2-3 possible ideas by next week

Join slack and github

Talk with us if you have questions about team formation or project ideas!