

Draft Project Proposal

Senior Design Lab

Blackboard submission • Due Sunday, September 13

Why this proposal matters

- It gives instructors enough detail to provide useful early feedback.
- It helps us match your team with an alumni mentor.
- It forces your team to turn an idea into a problem, users, and next steps.
- It is an early draft. You are allowed to revise the project after feedback.

Required submission

- Team submission, not individual submission.
- At least 3 slides.
- Submit one PDF to Blackboard.
- Due Sunday, September 13.
- Simple slides are fine. The goal is clarity, not design polish.

If your team already has one idea

1. Introduction: team members and brief project idea.
2. Problem and users: what problem, who has it, and how they would use your system.
3. Related work / competitors: how others solve this now, and what gap remains.

This is the minimum structure. Add slides if your idea needs more explanation.

Slide 1: Introduction

- Team name.
- Names of all four students.
- Tentative project title.
- One or two sentences explaining what you want to build.

Example: We plan to build a web app that helps GW students discover relevant campus events and save them to a personal schedule.

Slide 2: Problem and users

- What problem are you trying to solve?
- Who are the users?
- What would users do with your system?
- What evidence do you have that this problem is real?

Example: Students often miss events because information is scattered across emails, Instagram, club pages, and flyers. The system would let students search, filter, and save events.

Slide 3: Related work, competitors, and gap

- List existing products, apps, websites, papers, or past projects.
- Explain what they already do well.
- Explain what is missing or not well solved.
- Be honest. A clear gap is stronger than claiming nobody has tried this.

Example: GW Engage, Google Calendar, and social media already share event information. The gap is personalized discovery across multiple sources in one place.

If your team has two ideas

- Submit one PDF, not two separate files.
- Use the same structure for each idea, but keep it short.
- Label them clearly: Idea A and Idea B.
- At the end, say which idea your team currently prefers and why.

A reasonable format: 2–3 slides for Idea A, then 2–3 slides for Idea B.

If your team is still unsure

- Do not wait for the perfect idea before writing.
- Use the proposal to compare ideas and get feedback.
- Review the optional project ideas in the next slides.
- You may also look at faculty research projects and discuss possible capstone directions.

Optional idea: RTX / autonomous vehicle competition

- Possible joint capstone project with Mechanical and Aerospace Engineering.
- Likely involves software, robotics, autonomy, sensors, and team coordination.
- Good fit for students interested in robotics, embedded systems, simulation, or autonomy.
- If interested, discuss with instructors before committing.

East Coast AVC video: <https://www.youtube.com/watch?v=J9QkS8nLYy0>

Previous RTX final presentations:

https://drive.google.com/drive/folders/1kFB2U9spiTjpAv5S5kdbK_xs505fg5Cj?dmr=1&ec=wgc-drive-globalnav-goto

Optional idea: Faculty-led consensus project

- A faculty-led project idea proposed by Prof. Rahul Simha.
- Potential fit for a strong team interested in algorithms, systems, AI, decision-making, or applied software development.
- The linked description should be reviewed before deciding whether the scope fits Senior Design.
- If interested, discuss with instructors first so we can coordinate next steps.

Faculty page: <https://cs.engineering.gwu.edu/seas.gwu.edu/~simha/>

Project description folder: https://drive.google.com/drive/folders/1YpL4VWvp89mM8bNptFGrmS_2rhTGenp8

Optional idea: Teach Anything

- Teach Anything is an open-source AI platform for higher education.
- A possible project could design and implement new features for the existing platform.
- Good fit for students interested in education technology, AI, full-stack development, or open-source work.
- This is optional. Teams should evaluate whether the scope and technical work fit their goals.

Project website: <https://www.teachanything.ai/>

Feature ideas / issues: <https://github.com/akhileshrangani4/teachanything/issues>

Open-source codebase: <https://github.com/akhileshrangani4/teachanything>

Optional direction: Faculty research projects

- You may also explore faculty research areas for possible project directions.
- A good capstone project still needs a clear product, user, technical scope, and deliverables.
- Do not email many faculty at once. First discuss with your team and instructors.

GW CS faculty directory: <https://cs.engineering.gwu.edu/faculty-directory>

Prof. Qu research page: <https://faculty.cs.gwu.edu/xiaodongqu/>

A stronger proposal is specific

Too vague

“We want to build an AI app for students.”

Stronger

“We want to build a web app that helps first-year students find relevant campus events by combining event listings, club interests, and schedule constraints.”

Before you submit

- The PDF has at least 3 slides.
- All team members are listed.
- The project idea is understandable in one minute.
- The problem, users, and use case are clear.
- Related work or competitors are named.
- The gap or opportunity is clearly stated.

Main takeaway

For this draft, clarity is more important than completeness.

Tell us what you want to build, why it matters, who would use it, and what existing solutions do not solve well enough.

Submit one PDF to Blackboard by Sunday, September 13.