Lecture 1: ECE/CS 4710 Sr. Project Design

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Course Description

- This course is for students with CE major who are seniors within one year of graduation. In this course, you (team) need to complete the design of an engineering you have proposed in 3992 last Spring semester. The fully functional project is demonstrated at the end of the semester.
- Three major goals
  - Identify, formulate, and solve engineering problems.
  - Design a system, component, process, or software package to meet a specification.
  - Function on a multi-disciplinary team in various roles

Class Logistics

- **Staff**
  - Instructor: T-W Huang (tsung-wei.huang@utah.edu) and Ken Stevens (kstevens@ece.utah.edu)
  - TA: Cheng-Hsiang Chiu (u1305418@utah.edu)
- **Class schedule**
  - 12:15 PM – 13:45 PM Tu/Th at MEB 3143
- **Lecture only this week!**
  - Friday will have each team give a pitch
- **Weekly project meeting starting next week**
  - The class will be mostly in-person project meeting
    - We can accommodate zoom if you need
  - Sign up your slot here: https://docs.google.com/spreadsheets/d/1wXqXjKIsvy4jrRFdygoRJFNKM5Lz3bVM674V4YcjLks/edit?usp=sharing

Scoring

- **Final demo day (60%)**
  - Each team needs to give a demo (around the final week) + video recording
  - Stick with your 3992 proposal! (it is not wise to change the topic at this moment)
- **Weekly report (30%)**
  - Design review with instructor of individual technical contribution (weekly meeting + report)
- **Final report documentation (10%)**
  - Extended from your 3992 final proposal
  - Team grade

Three Types of Deadlines

- **Weekly report after project meeting**
  - Due 23:59 PM every Sunday, except fall break (Oct 10-17) and Thanksgiving break week (Nov 22-28)
- **Demo day to present your project (around Dec 8)**
  - Each team needs to participate in project demo
  - Each team needs to record a 15-20 min video
- **Final report (one week after the demo day)**
  - Each team needs to turn in the final report within a week of the demo day
  - Each team member needs to submit a peer evaluation form separately to the instructor

Peer Evaluation Form Sample

====== Evaluation Form: On a scale of 1 to 12, grade each of the members of your group including yourself for their overall contribution to the project. Consider a score of 10 as a perfect grade, and 12 going far beyond the call of duty - an effort worthy of extra credit. Be as objective as possible.

INCLUDE YOURSELF AS A TEAM MEMBER:

Name of team member #1:

Name of team member #2:

Name of team member #3:

Briefly describe the contributions of each team member (including yourself) and provide a short but critical justification of the score you gave them:

Let's Look at Some 2020 Outcomes

- **Lego Battle Bots**
  - https://www.youtube.com/watch?v=hvWqNdt5L90
- **Autonomous Sailing Across the Salt Lake**
  - https://www.youtube.com/watch?v=eKXr_Y2f4zE
- **A Smart Home Gym**
  - https://www.youtube.com/watch?v=HHGH5g19fS4

Current Project List from 3992

1. MercuryMesh: P2P Network for Autonomous Vehicles
2. Smart Chessboard
3. Smart Bike Kit
4. HealthyBois (Heart Strawng 💖🥤) - Health Monitering App w/ Water intake and Heart rate tracking
5. Zoom Peripheral
6. Holofan
7. VectorU: Active thrust vectoring at model rocket scale
8. UGuard
9. Textable Walkie-Talkies - TxTy
10. Thesis: An assessment of the impact of unregulated transmissions on Intelligent Transportation System communications at 5.9GHz
11. Thesis: Smart Helmet

Weekly Report this Week

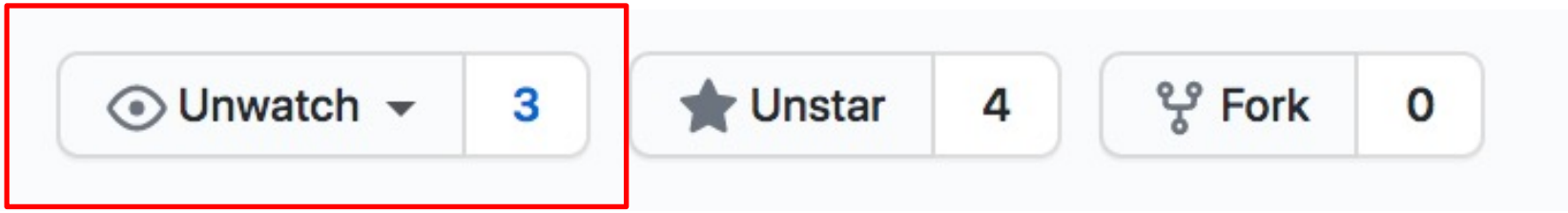
- **On Thursday, each team present three-page slides**
  - Page 1: Project description (what/why)
  - Page 2: Team member and responsibility (who)
  - Page 3: Execution plan this semester (how)
  - Each team aims for about 5 mins
  - Sign up here: https://docs.google.com/spreadsheets/d/1wXqXjKIsvy4jrRFdygoRJFNKM5Lz3bVM674V4YcjLks/edit?usp=sharing
- **Email your slides to the TA (u1305418@utah.edu) by 11 AM Thursday (8/26)**
- **Goal of presentation**
  - Refresh your mind about your project idea
  - Let the instructor know your execution plan

Weekly Meeting Next Week

- Sign up your weekly meeting slot here: https://docs.google.com/spreadsheets/d/1wXqXjKIsvy4jrRFdygoRJFNKM5Lz3bVM674V4YcjLks/edit?usp=sharing
- By default, each team has 20 mins
- By default, we meet at MEB 3143
  - Please indicate in the worksheet if you want to do zoom
- First report due: 23:59 PM on 9/6 (Sunday)

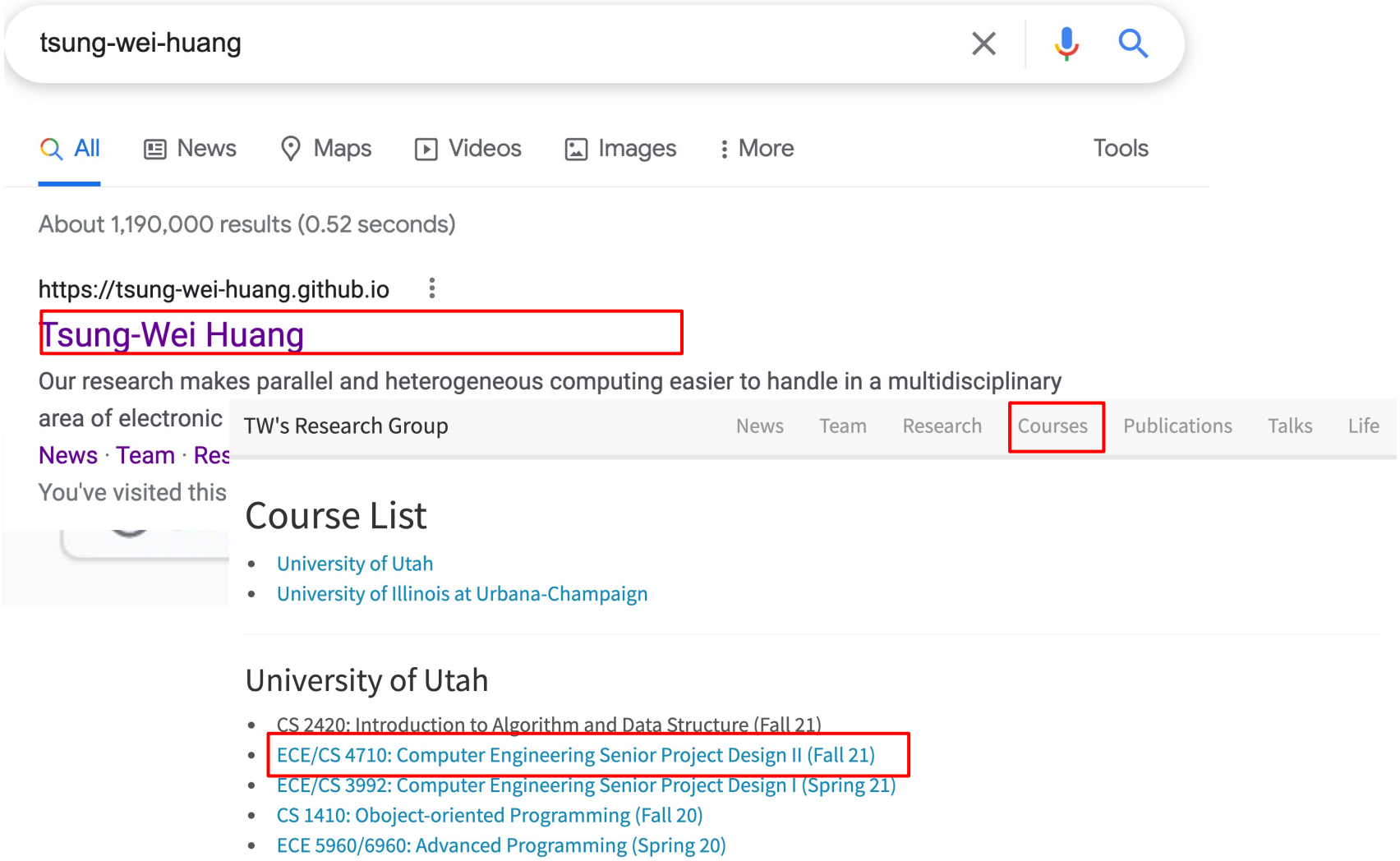
Please Bookmark the Two Links

- https://github.com/tsung-wei-huang/ece4710
- **You can receive all updates**
  - New announcement
  - New check-in data
  - New updates
  - No GitHub account…? (you must be kidding me)



- **We will use the google worksheet most of the time: https://docs.google.com/spreadsheets/d/1wXqXjKIsvy4jrRFdygoRJFNKM5Lz3bVM674V4YcjLks/edit?usp=sharing**

You Can Find the Link at My Page



Paid Undergraduate Research Assistant

- I am looking for a undergraduate research assistant who is interested in software programming and building parallel algorithms for computer engineering applications
- The position will be paid with an hourly rate up to 20 hours a week over the fall semester
- This past summer two of you worked with me and we submitted a research paper to a conference
- Background needed
  - Self-motivated (this is an opportunity to grow yourself)
  - C++ programming

Talk to or email me (with your CV) if you are interested!