# Introducing a Technical Interview Preparation Activity
## in a Data Structures and Algorithms Course

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# Industry Recruitment Process

| Apply | Screening | Interview |
|-------|-----------|-----------|

**Apply**
- Applying at Career Fairs
- Online

**Screening**
- Resume by Application Tracking System,
- Referrals, or
- Recruiters or a
- Technical/Aptitude Test

**Interview**
- 0-4 remote or in-person Technical *Requires: Coding + Data Structures + System Design*
- Behavioral interviews

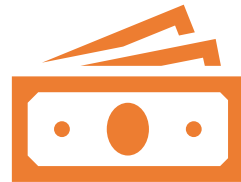Expectations: Technical Skills + Professional Skills + Working outside the curriculum

# Computing students fail to secure employment due to:

**Psychological constraints**
e.g., low self-efficacy and lack of agency

**Social constraints**
e.g., family responsibilities

**Financial constraints**
e.g., work responsibilities

**Recruitment-process constraints**
e.g., involvement in projects & extra-curricular activities

Source
Kapoor, A. and Gardner-McCune, C. 2020. Barriers to Securing Industry Internships in Computing. ACE '20
Behroozi, M., Shirolkar, S., Barik, T. and Parnin, C. Does stress impact technical interview performance? ESEC/FSE 2020

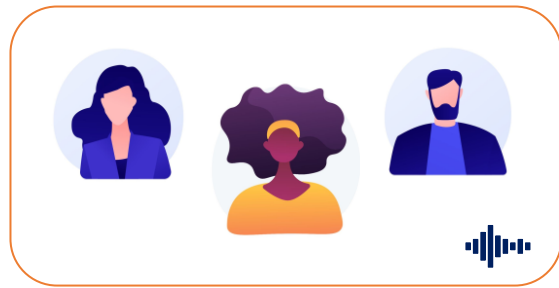# Taking Student Input (Week 2 of the Data Structures & Algorithms course)

**59%**

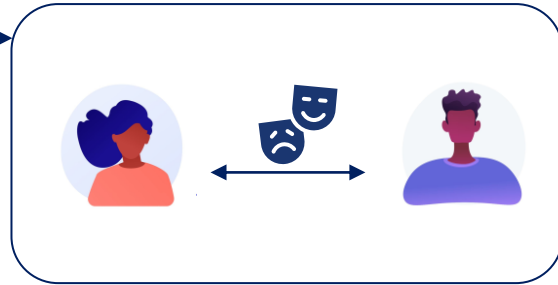No familiarity with Technical Interviews (n=165, N=279)

**90%**

Never participated in a Technical Interview (n=251, N=279)
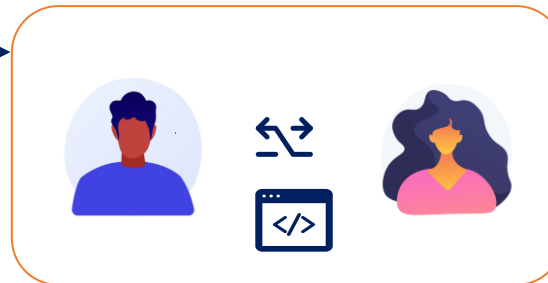
# Hire Thy Gator Interview Exercises



Panel on Internship Application
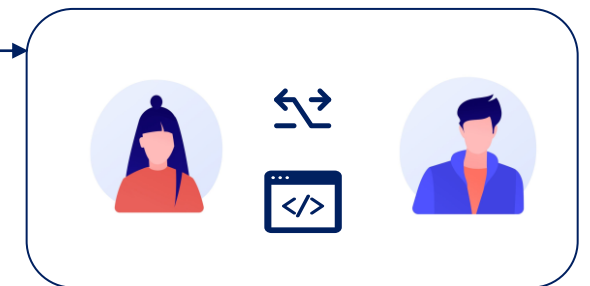Process, Experiences, and
Strategies (45 minutes)

Week 5

Role Play on Technical Interviews by
Teaching Assistants (50 minutes)

Week 6

Interview 1: Self-selected pairs
Topic - Trees or Heaps

Week 8

Interview 2: Random pairs
Topic – Sets and Maps or Graphs

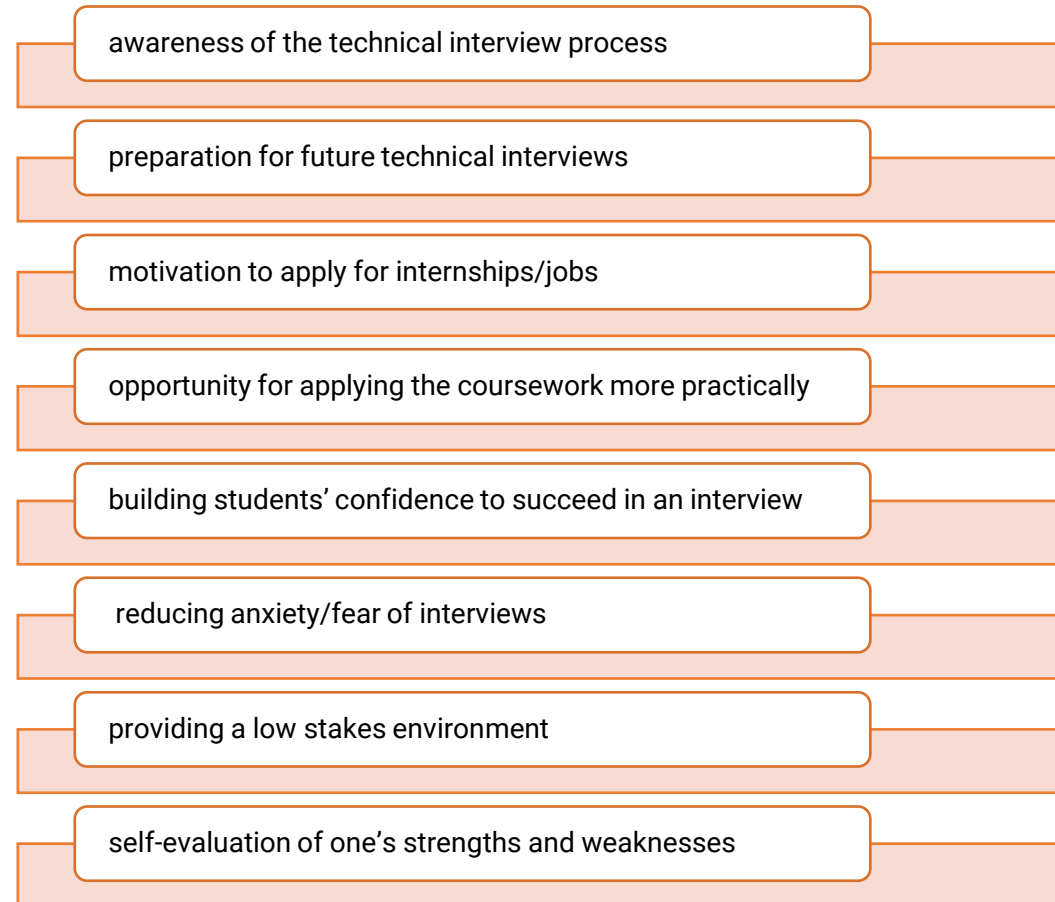Week 13

# Activity Logistics, Grading, Deliverables

- Activity Logistics
  - 40-45 minutes interview
  - 15-20 minutes session on giving actionable feedback to the interviewee (guiding questions were provided)
  - Students' self-reported time for preparation and participation
    - 2 hours for acting as an interviewer
    - 1 hour 55 minutes for acting as an interviewee

- Grading
  - Based on participation
  - Carried 8% of the points of final grade (4% for acting as an interviewee and 4% for being an interviewer)

- Deliverables
  - Link to the recorded video interview
  - A Google doc link used for solving the problem
  - A reflection survey on self and partner's performance

# Affordances and Opportunities from experiences (N=258)

## 92%

### Activity should be continued as-is or with minor modifications

## Affordances

- awareness of the technical interview process
- preparation for future technical interviews
- motivation to apply for internships/jobs
- opportunity for applying the coursework more practically
- building students' confidence to succeed in an interview
- reducing anxiety/fear of interviews
- providing a low stakes environment
- self-evaluation of one's strengths and weaknesses

# Affordances and Opportunities from experiences (N=258)

"The [interviews] massively improved my confidence for interviews."

"These were really good for contextualising our course content with something that is very relevant to all of us looking for jobs and internships".

"I think these should be continued as they are great for people like me who have never touched anything remotely close to a technical interview. I think it takes away the uncertainty and fear of these interviews to an extent as it also lets you collaborate with classmates and see their point of views as well."

# Affordances and Opportunities from experiences (N=258)

Opportunities

Students who are not CS majors/interested in CS jobs can be given alternate activities
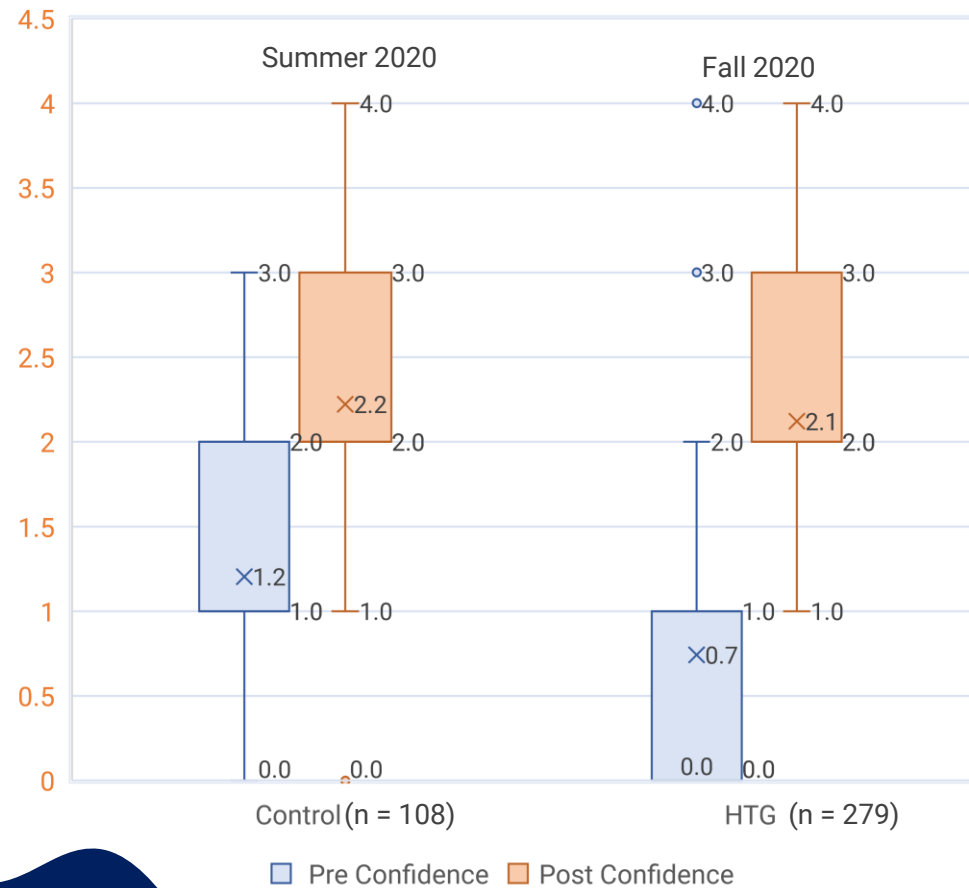
Provide a list of questions

Add behavioral questions component

Match partners based on similar skillset

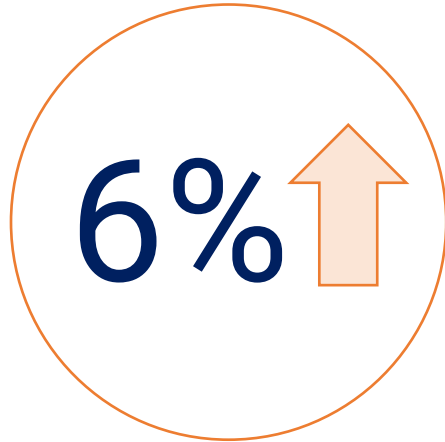Logistics: reducing length requirement and allowing text editors

# Evaluation (N = 387)



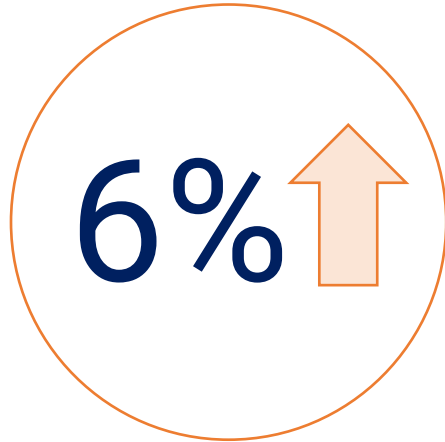Mean Confidence to succeed in a Technical Interview

# Evaluation (N = 387)

Mean Confidence Gain

6% ⬆

Higher confidence gain compared to the control group:
Intervention: 42.4% vs Control: 36.4%

# Evaluation (N = 387)

Mean Confidence Gain

6% ⬆

Higher confidence gain compared to the control group:
Intervention: 42.4% vs Control: 36.4%

> I found the Hire Thy Gator exercises to be incredibly helpful and that you and the TA's went above and beyond to prepare students for interviews and industry. [...] I just accepted a great software engineering internship for this summer! Thank you for everything.
>
> – Fall 2020 student

> I would just like to let you know that thanks to your teaching, I was able to successfully answer a technical question at career showcase. It resulted in an offer for an interview from the company. I would not have expected an offer as a freshman, so thank you so much!
>
> – Spring 2021 student

# Acknowledgements

## Thanks to all the TAs for executing this:

Amar, Josh Dargan, Jonathan, Ori, Sabrina, Katie, Tima, Sanaz, Marc, Hamish, Dom, Andres,  Dhruv, Paul, Rob, Irelis, Vanessa, Josh Zimmerman

## Questions?

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