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Technical Interview Workshop Day II @ Stanford

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Senior Quantitative Software Engineer

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Yongwhan Lim

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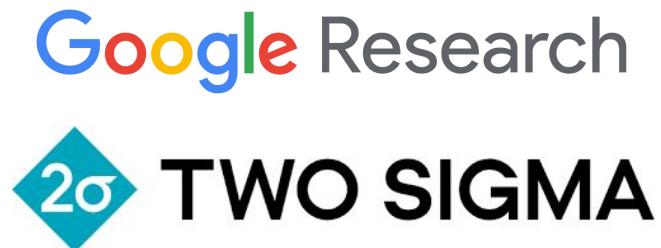
Education



Part-time Jobs



Full-time Job



Workshops



Coach/Judge



<https://www.yongwhan.io>



Overview

- **Part I**
 - Behavioral interview (must for any SWE)
 - System design interview (> entry level)
 - Machine learning interview (ML engineer)
- **Part II: Questions and Answers (Q&A's)**

Part I

Part I-A

Behavioral

Behavioral Interview (for everyone)

- Becoming an industry standard to have **at least one** session in typical Software Engineer (SWE) interview loop.
- Wants to assess leadership potential.
- Tests soft skills (e.g., effective communication, conflict resolution, etc.)
- Open-ended: **not** about getting it right or wrong!

Example Question #1

- Tell me about a time when you led a team to successfully complete a project.

Example Question #1: Sample Answer

- Best if you led a hackathon/passion project.
- Otherwise, if you led a project as an intern, highlight it.
- Be **concise**!
- Include hard **metrics** in terms of %, \$, etc.
- Provide **concrete** examples.

Example Question #2

- How do you set up priorities for the work you are facing each day?

Example Question #2: Sample Answer

- Priority queue idea:
 - Most **essential** responsibilities first!
 - Respond to emergencies as needed.
 - Non-essential tasks can be delayed.



Example Question #3

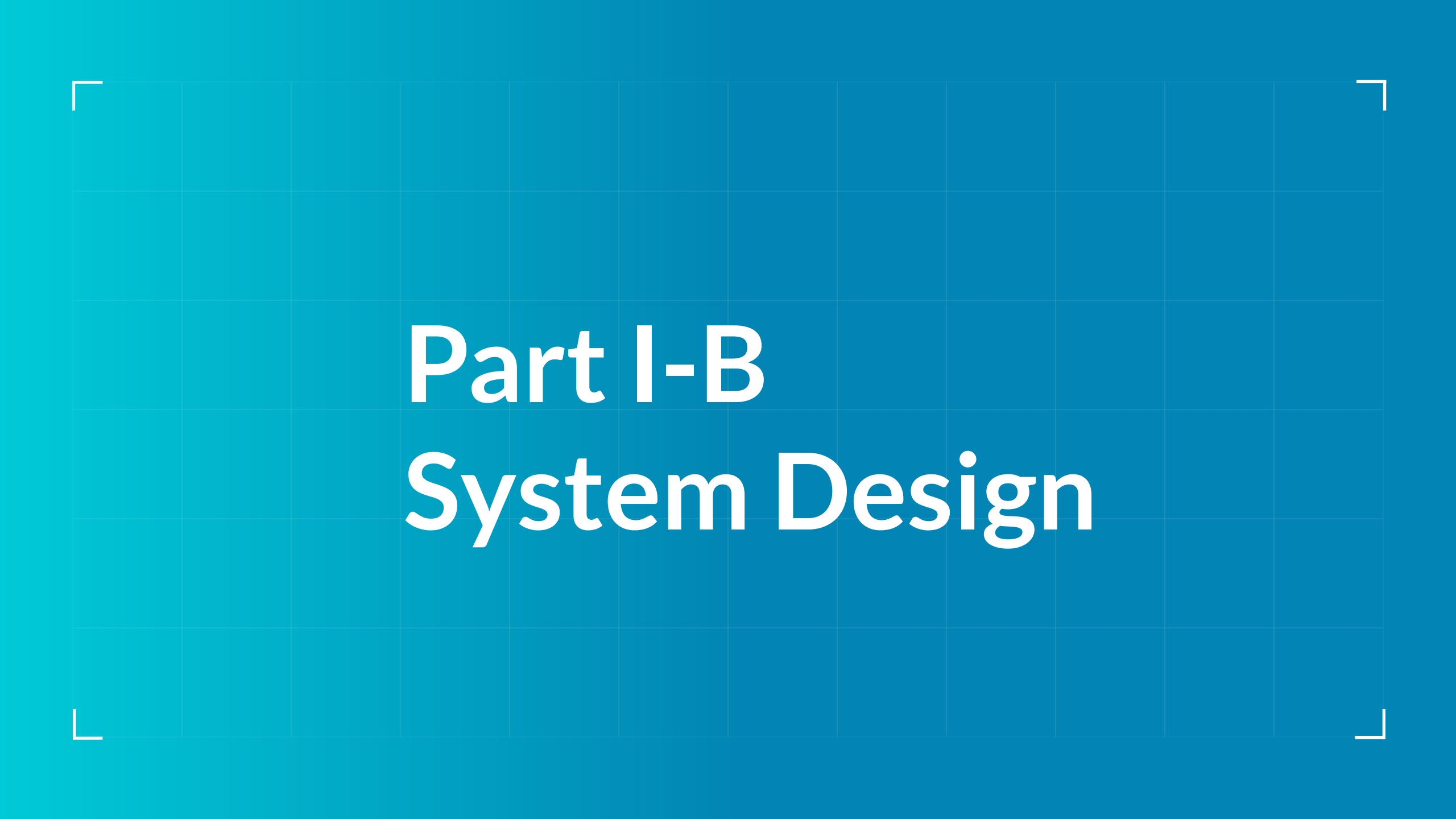
- What experiences do you have relevant to this job?

Example Question #3: Sample Answer

- Highlight a technical project you have done that lasted **at least** one year.
- Discussing technologies is a **must**! (programming languages, databases, algorithmics, development tools, etc.)

Resources

- There are number of preparation books.
- For example:
 - *Behavioral Interview Questions and Answers* by Horatio Bird.
 - *Leadership Interview Questions You'll Most Likely Be Asked* by Vibrant Publishers



Part I-B

System Design

System Design Interview (for > entry level)

- Identify large components of the system and describe how each component is connected.
- Actual implementation details are **not** as important.
- Tests whether you can design an architecture using standard design patterns.

Example Question #1

- Design YouTube

Example Question #2

- Design Instagram



Resources

- Must reads are:
 - *The System Design Interview, 2nd edition* by Lewis C. Lin, et. al.
 - *System Design Interview* by Alex Xu

Part I-C

Machine Learning

Machine Learning Interview (for ML SWE)

- **Hands-on experience** using TensorFlow/Keras/PyTorch: comfortable using data to feed into a baseline model.
- **ML foundations** (e.g., linear regression, support vector machine, etc.)
- **Recent trends** (reinforcement learning, deep learning architectures, etc.)

Machine Learning Interview (for ML SWE)

- **Hands-on experience** using TensorFlow/Keras/PyTorch: comfortable using data to feed into a baseline model.
- **ML foundations** (e.g., linear regression, support vector machine, etc.)
- **Recent trends** (reinforcement learning, deep learning architectures, etc.)
- **In-depth knowledge** of a specialization can be a plus, but not required (e.g., computer vision, natural language processing, etc.).

Example Question (Theory)

- What is a difference between unsupervised learning and supervised learning?

Example Question (Hands-on)

- How do you avoid overfitting?

Example Question (Implementation)

- Given stock market data, predict the future stock price.

(Must!) Resources

- **Textbooks**

- *Deep Learning* by Ian Goodfellow, et. al.

- **Courses**

- CS 229 (Stanford): Machine Learning

- **Tools**

- PyTorch
- Keras
- TensorFlow
- Jupyter

Part II

Q & A's

1:1 Meeting Opportunity!

- If you would like to meet in 1:1, please sign up using: calendly.com/yongwhan/one-on-one/
- I'd love to help you landing your **DREAM (industry) job!**

Online Technical Interview Bootcamp at Stanford

Spring 2023 (Pilot)

- **In-person** information session in **March 2023**: Stay tuned on an update from Trudy!
- Every **Sundays** from **April 9** to **June 4** (9 sessions).

ICPC Online Training in Competitive Programming (OTCP)

Available NOW(!) through a discord server invite: <https://discord.gg/7bvMnMyF6G>

- In ICPC Internship Manager capacity, I am managing:
 - **Practice contests** on every **Saturdays** from **12pm ET** to **5pm ET**.
 - **Masterclass** on every **Saturdays** at **7pm ET**.
 - If you are impacted by recent economic downturn (e.g., delayed/rescinded offers), definitely contact me as I can potentially **support your F1 OPT** through an internship initiative.

Contact Information

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Feel free to send me a connection request.
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