
Special Workshops

Technical Interviews

Part II

Yongwhan Lim
Friday, April 14, 2023

Yongwhan Lim



Education



Part-time Jobs



Full-time Job



Workshops



Coach/Judge



<https://www.yongwhan.io>

Yongwhan Lim



- Currently:
 - **CEO** (Co-Founder) in a Stealth Startup;
 - **Owner** of Christian and Grace Consulting;
 - **ICPC Internship Manager**;
 - **ICPC North America Leadership Team**;
 - **Columbia ICPC Head Coach**;
 - **ICPC Judge** for NAQ and Regionals;
 - **Lecturer** at MIT;
 - **Adjunct** (Associate in CS) at Columbia;



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Overview

- **Part I: Behavioral Interview (must for any SWE)**
- **Part II: System Design Interview (> entry level)**
- **Part III: Machine Learning Interview (ML Engineer/Data Scientist)**

Part I: Behavioral

Behavioral Interview (for everyone)

- Becoming an industry standard to have at least one session in typical software engineering 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.
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- 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:** C++ vs Java vs Python vs Go vs ?
 - **Databases:** SQL vs NoSQL vs ?
 - **Algorithms and Data Structures**
 - **Development tools:** Emacs vs Vim vs Visual Studio vs JetBrains vs ?

Resources

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

Part II: 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 III: Machine Learning

Machine Learning Interview

- **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

- **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 (e.g., computer vision) can be a plus, but not required.

Example Question (Theory)

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

Example Question (Hands-on)

- What are some practical ways to avoid overfitting?

Example Question (Implementation)

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

(Must!) Resources

- **Textbooks:** *Deep Learning* by Ian Goodfellow, et. al.
- **Courses:** Stanford CS 229 (Machine Learning); ...
- **Tools:** PyTorch; Keras; TensorFlow; Jupyter; ...

Closing...

International Collegiate Programming Contest (ICPC)

- If you would like to get involved in helping out as a volunteer or an official (unpaid) intern, please reach out to me at yongwoods@icpc.global.

1:1 Meeting Opportunity

- If you would like to meet in 1:1, please sign up using:
<https://calendly.com/yongwhan/one-on-one>.
- I'd love to help you landing your dream job!

Contact Information

- Email: yongwhan@yongwhan.io
- Personal Website: <https://www.yongwhan.io/>
- LinkedIn Profile: <https://www.linkedin.com/in/yongwhan/>
 - Feel free to send me a connection request!
 - Always happy to make connections with promising students!

Slide Decks

- You can find the slide decks from the presentations today and yesterday from:

<https://github.com/yongwhan/yongwhan.github.io/tree/master/nyu>

THANK YOU

