Alloy

Great to meet you!

This document outlines what interviewing at Alloy looks like. We hope it helps.

Engineering at Alloy

At Alloy, we help brands operate more efficiently based on actual demand. When consumers buy goods like shampoo, chocolate, or headphones, it leaves a trace - sales are tracked, and inventory levels change. Our cloud-based platform automatically connects and analyzes this data, which is siloed across hundreds of channels from e-commerce to stores, suppliers, and 3PLs.

> *"The challenges at Alloy range from building a robust data pipeline that's able to process terabytes of data per day, to building user interfaces that give you high-level insights but still allow the customer to drill into the details when needed. There is no platform out there that connects the supply chain end to end, and that makes our work very exciting - there are no right answers, and a lot of uncharted territory."*
>
> - Lasse Holmstedt, VP of Engineering

All engineers at Alloy have the opportunity to work on any part of that stack that interests them. We organize work so that you can hit the ground running, but also support you in learning more about topics you haven't mastered yet. If you are curious and open, you'll be right at home!

Interviewing at Alloy

Engineering interviews at Alloy typically consist of the following stages:

- Intro Screen
- Coding Interview
- Final Round:
    - Coding Interview
    - Design Interview
    - Presentation
- Reference checks

Each interview consists of approximately 45 minutes of problem-solving, and about 15 minutes of conversation to get to know you as a person. You will get to meet different people, and hear their perspectives on what it's like to work at Alloy. This applies to all technical roles. Further information is given in the corresponding sections.

All of the interview questions we ask are directly tied to our actual work – no one will ask you questions straight out of Cracking the Coding Interview! We don't ask trick questions - everything we ask is a real problem we have run into at Alloy, which we hope makes for a meaningful interview experience.

The following sections provide more detail for each step of the interview process.

Technical interviews

In our technical interviews, you'll be live coding via the video conference link in your calendar invite. Because you will be working in a shared online tool (such as a shared code editor), a computer is required.

Typically, a couple of interviews focus on programming problems and in another interview you'll work through a software design problem together with one of our interviews.

Programming Problems

We'll provide some context about the problem and will share a link to a live environment that supports Java, Python, JavaScript, Ruby and several other languages. We're not particular about the language used - if you're more comfortable with a less-used language, just let us know in advance and we'll try to accommodate that.

Software Design

We'll be working together on a more abstract, high-level problem using collaborative tools like Google Docs or a virtual whiteboard.

For software design problems, we'll be working together with you to solve something more abstract, so expect to work with e.g. Google Docs.

Presentation

As part of the final round, you'll lead a discussion about your past work. You'll lead us through a product or system you've recently built that highlights your abilities. Slides are not required, but can be helpful. An audience of two or three developers will participate and discuss the topic you choose. We generally expect the presentation part to last about 20 minutes, followed by a 20-30 minute discussion.

To prepare for the presentation, we're looking to understand:

- What is the business context of the problem? Why is the problem important? Who is the user?
- What are the technical details of your chosen solution? What engineering tradeoffs, if any, were considered?
- Given the opportunity, what would you change about your solution now?

Technical interview hints

You don't need a background in supply chain to succeed in our interviews, but understanding the domain doesn't hurt! To understand the problems we're solving, our customer pain points, the type of data we process, and the work that lies ahead, you can read our case studies here.

Trees and graphs are key data structures that make Alloy work at all layers of the stack. As such, our video and on-site interviews assess your skills and understanding of these concepts. But don't worry, you won't be asked to implement a red-black or AVL tree – this isn't a CS class.

You can prepare for software design questions by thinking about how you would implement a system you have not run into before.

For all technical interviews, there are no right or wrong answers. We're more interested in understanding your communication style and approach to complex problems. Be sure to verify your assumptions, think aloud and ask questions before writing code. When done, don't forget to test your solution and if you have time, discuss how you would get the solution up to production quality.

About Alloy Europe

Alloy Europe is fully remote, with employees working closely with our US and Canada teams.

About the Vancouver office

The Alloy Vancouver office is located downtown. We're surrounded by coffee shops, restaurants and the office is only steps away from Canada Place. It's easy to reach by a few minutes' walk from the Waterfront skytrain station.

Address

1066 W Hastings St, Vancouver, BC careers@alloy.ai

About the Alloy USA team

The Alloy USA team consists of two office hubs - Denver, CO and Washington, DC, as well as a team of remote employees in Sales, Marketing and Design. Our two US hubs house teams of Sales, CS and R&D staff.

Reference checks

After your final round, your hiring manager will also ask you to provide two or three references. We use this as an opportunity to discuss your past experience and learn how best to set you up for success in your new role at Alloy. To respect the time of your references, the calls last only ~20 minutes each.

A former manager or supervisor makes for a great reference as well as your former peers. If you are a recent graduate, no worries! Thesis or internship supervisors make for great references too.

Our values

Focus on what matters

Reevaluate priorities as necessary to pick the work that will have the highest impact to the customer and business. Work hard in a way that is sustainable. Choose the schedule that lets you achieve your best. Measure results, not hours. Respect your time and that of others; come prepared and leave with commitments.

Take ownership

Take initiative by proactively identifying opportunities or issues and tackling them. Strive for excellence. Hold yourself and your colleagues to a high standard. Create something that makes you proud. Follow through on our commitments to customers, users, and each other. We are all doers, regardless of role — no task is beneath you.

Iterate to excellence

Prefer action over perfection to learn quickly from early feedback. Be flexible and accept the need to make tradeoffs and change directions. Everything is a work in progress, nothing is done. Question prevailing assumptions, but understand them first. Gather evidence and champion ideas that will make our products and our company better. Verify and validate.

Communicate openly and respectfully

Offer and expect transparency to build trust. Confirm mutual understanding, especially in the face of disagreement. Treat each other with respect. Criticize constructively — the work, not the person.

Have each other's backs

When interacting with each other, always assume good intentions. Trust each other and take risks together. Give praise generously and take joy in others' accomplishments. Grow a diverse team by actively seeking different backgrounds and cultivating an inclusive culture. Focus on how others' strengths complement us, rather than how their weaknesses invalidate them.

Additional Resources

Hear what it's like to work at Alloy from some of our employees:

Gwylim – Engineering
Amelia – Engineering
Michael – Engineering Leadership
Lasse – Engineering Leadership

Manfred - Client Solutions
Logan - VP Client Solutions
Eric - Sales

To find out more about Alloy, check out our case studies and press coverage as well.

Frequently Asked Questions

Alloy is distributed across different geographies. How does communication work?

We strongly prefer text-based communication, and we use a lot of tools to make this work. For example, we have Google Docs for engineering design documents, Clubhouse for user stories, bugs and the like, GitHub for code reviews, Guru for a wiki, and Slack for company-wide communication. Aside from contractually sensitive information, most communication is open to all employees!

Do you have to travel?

We like to occasionally bring people together for some in-person time. As most of our engineering team members are in Vancouver, people from other geographies typically travel there. The frequency depends on where you are located and which team you are on, but at most once a quarter. That includes the company retreat that happens once a year.

What does Alloy's architecture look like?

Architecturally, Alloy is divided into three major parts: the data pipeline, the backend, and the frontend. The data pipeline is responsible for machine learning models and forecasting, as well as pulling in data from hundreds of different sources, normalizing it and processing it so that the backend can digest it.

The backend, then, does the heavy lifting: computing hundreds of derived metrics, aggregating the product-location data to any granularity, and computing actionable insights from the data.

The frontend provides highly configurable dashboarding and analysis tools that each customer can modify to best fit their processes. Almost everything in the frontend is customizable, from layout to how the metrics are computed.

We strongly believe in keeping things simple, only adding more complexity when necessary. We're constantly evaluating what the right steps are to scale the platform.

How do you deal with technical debt?

The challenge with technical debt is knowing when to take it, and when to pay it back. We have a fairly strict code review process on GitHub to help us eliminate the unnecessary debt upfront - but sometimes, you need to take debt to first prove that there is value to the end user. Ownership is also important. Each major part of the platform has a team that's responsible for it, so it's clear who to turn to when things don't work.

What does the infrastructure look like?

At the moment, we rely on Google Cloud for our infrastructure. We manage the server infrastructure with Terraform and Kubernetes, and deploy with Jenkins as our CI. We're constantly looking at scaling the infrastructure as we get more users onboard Alloy.

How does Alloy get the data?

It's easy to illustrate this with an example. A typical Alloy customer will want to have data in Alloy anywhere from a couple of dozen retailers on up to a few hundred. Alloy gets this data either from our customer (the manufacturer of goods) or directly from the retailers. We often have partnership agreements with retailer organizations, and pull the data directly through a service that they provide.

How do you use AI in your product?

In our R&D department, we're looking to use AI in practical ways, both in our product as well as in the product development process. Within the product, we have beta products that leverage LLMs and exploratory projects for ML-based forecasting.

In product development, we're constantly exploring how to best leverage LLMs in R&D work, to make ourselves more efficient, and we're leveraging LLMs as personal assistants, using AI-based IDEs and leveraging these technologies for certain aspects of content creation.