

Transcript: Meet Rebecca Isaacs, Senior Principal Scientist, AWS Resilience

[00:00:00.00] Speaker 1:

I'm a Senior Principal Scientist in the AWS Resilience Organization, and my role at Amazon is to lead a small science team.

[00:00:09.00] Speaker 1:

We are trying to identify in advance where services might be vulnerable to a class of failure we call tipping point failure.

[00:00:18.00] Speaker 1:

The key thing about these failures is that there's a triggering event, like a load surge or a drop in capacity.

[00:00:26.00] Speaker 1:

The service, it starts to fail, it starts returning exceptions.

[00:00:29.00] Speaker 1:

So this is an exciting problem because it's so impactful. It matters not only to the business but also to customers.

[00:00:35.00] Speaker 1:

When these failures happen, they are incredibly disruptive.

[00:00:38.00] Speaker 1:

At Amazon, we have made very specific incremental step forward. And it's the combination of the mathematical analysis, combining that with discrete event simulation and then with emulation and going back and forth along that spectrum to refine and iterate on the results.

[00:00:56.00] Speaker 1:

It proves to be a very effective way of predicting where systems are vulnerable.

[00:01:04.00] Speaker 1:

Amazon is the place to really understand distributed systems at scale and how they behave, and all sorts of weird and wonderful things happen and this is the place to be able to see that and to try and make them behave better for customers.