GCSE Bitesize Computer Science

Facebook's Jackson Gabbard on algorithms

I'm Jackson Gabbard. I'm an engineer at the Facebook London office. I've been at Facebook about 4 years and across those 4 years I've worked on a lot of different teams, which includes, like, Facebook Timeline for mobile devices. I also worked on the App Center, and then I also spent a little bit of time working on Facebook Groups.

Inside Facebook, especially because we're at scale, at large scale, 1.2 billion users, roughly - at that scale, algorithms matter a lot, especially paying attention to the efficiency of the algorithms. Whenever you use Facebook, you might search for someone or something in the search bar at the top. So you type in, let's say it's your friend Marvin, you type in M. At the moment of that M, there is an algorithm that's taking that input and saying, 'Okay, this person has given us an M. What should we show them?' Trying to deduce the right thing, the most important thing for you to see, is an extremely interesting algorithmic challenge. For instance, you might have seven friends whose name starts with M. One of them is going to be your closest of those friends and one of them will be your 7th closest, or whatever. So we need to be able to say, 'Okay, from all the friends who start with the letter M, let's pick the closest friend first, the next, the next, the next, and so on', and give those people as a list of results for the search. The process of doing that relies on, I believe we use a Trie data structure, which is a way to split apart words into their letters. And so words that are similar fall into the same branches of the tree. The ranking of that comes along with some degree of metadata associated with each node of the tree, so that you know which nodes are likely to lead to the results that are the most important.

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