Speaker: Dr. Alon Halevy (Meta) - "(CRAY Colloquium) Well-being, AI, and You: Developing AI-based Technology to Enhance our Well-being"

The title of this talk, “Well-being, AI, and You: Developing AI-based Technology to Enhance our Well-being" is interesting. When I read the media sites (newspaper sites!) on the internet today it seems that the general public is really concerned about AI and what its effects will be on our daily lives. I am curious as to how we can use AI to improve our well-being as a number of my students seem to be wrestling with mental health issues these days.

The situation today is that there are a lot of apps that are concerned about our well-being but they are all disconnected from each other. Dr. Halevy uses the analogy that well-being apps today feel like programming before operating systems. He posits a framework that allows apps to cooperate with each other. (I would say that a framework is not an operating system and I think his analogy is a bit flawed but let us go forward.) The components of his framework are a database component of experiences, an attention component around these experiences in the form of recommendations, and lastly, a connection component to help with relationships.

Dr. Halevy next discusses human values. I am trying to see how this applies to his main subject. Maybe it is the fact that we have to take into account human values when we make software applications. Companies like Meta, X, Amazon, etc. wrestle with ethical questions in their software. If I state that there is to be no hate speech I limit someone’s right to free speech. If I value my user’s privacy then I may not be able to give the perfect recommendation to the user of my recommendation system. Thus, there is usually a tradeoff between human values and software functionality. This could be especially applicable in a well-being framework that tracks a lot about an individual user. Thus, Dr. Halevy along with a team of 21 professionals got together and created a list of the human values that should be considered when designing AI systems.

We now move into the first component of the operating system which is creating a database of experiences with all of the data a person is willing to collect. Dr. Halevy calls it an “ecosystem of personnel data”. The speaker is adamant that he means all. Data around books read, websites visited, wearable smart devices, places visited, etc. etc. are all collected. This data is used to create a personalized summary which can be decomposed into smaller summaries and fed into services which have not been invented yet. We can build a personal timeline today thanks to GDPR which will give us this information in JSON files and the speaker has built such a tool. But, the speaker posits that we also need to capture preferences and future plans in your personal timeline. This includes our subjective experiences.

Of course all of this data should belong to the person whose data is being collected. Even further, this data should be secure and available only to that person unless they agree to share it at the moment they feel they will get some value from said sharing. “The consent to share data should be for a particular goal with no traces later on.” (Dr. Halevy) However, what happens with shared experiences? This is a question that needs to be solved but should be solvable.

Now that we have a timeline, how are we going to be able to ask questions of this timeline? We can look at questions which involve a single episode in the timeline. These should be fairly simple to answer. More complex questions involve multiple episodes, which have to query the timeline and synthesize these episodes together. There are two alternatives. One where the LLM does all of the reasoning and the other is where the database does the querying and works over sets.

Due to time constraints and the speaker wanting to leave time for questions his conclusion was light and the slide basically boiled down to, “If this is in the user’s interest then it will happen but there are important research challenges that are broadly applicable.” (speaker’s slides)