

The Future of Artificially Intelligent Assistants

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ABSTRACT

Artificial Intelligence has been present in literature at least since the ancient Greeks. Depictions present a wide range of perspectives of AI ranging from malefic overlords to depressive androids. Perhaps the most common recurring theme is the AI Assistant: C3PO from Star Wars; the Jetson's Rosie the Robot; the benign hyper-efficient Minds of Iain M. Banks's Culture novels; the eerie HAL 9000 of Arthur C. Clarke's 2001: A Space Odyssey. Today, artificially intelligent assistants are actual products in the marketplace, based on startling recent progress in technologies like speaker-independent speech recognition. These products are in their infancy, but are improving rapidly. In this panel, we will address the product and technology landscape, and will ask a series of experts in the field plus the members of the audience to take a stance on what the future of artificially intelligent assistants will look like.

KEYWORDS

Artificial Intelligence; intelligent assistants; conversational bots; speech recognition.

Panelist: Larry Heck

Larry Heck is a Research Director at Google leading an advanced R&D effort behind the Google Assistant. From 2009--2014, he was the Chief Scientist of the Microsoft Speech products team and later a Distinguished Engineer in Microsoft Research. In 2009, he co-founded the initiative that led to Microsoft's Cortana personal assistant. From 2005 to 2009, he was Vice President of Search & Advertising Sciences at Yahoo!,

responsible for the creation, development, and deployment of the algorithms powering Yahoo! Search, Yahoo! Sponsored Search, Yahoo! Content Match, and Yahoo! display advertising. From 1998 to 2005, he was with Nuance Communications and served as Vice President of R&D, responsible for natural language processing, speech recognition, voice authentication, and text-to-speech synthesis technology. He began his career as a researcher at the Stanford Research Institute (1992-1998), initially in the field of acoustics and later in speech research with the Speech Technology and Research (STAR) Laboratory. Dr. Heck received the PhD in Electrical Engineering from the Georgia Institute of Technology in 1991. He is a Fellow of the IEEE and holds over 50 United States patents.

Panelist: Alborz Geramifard

Alborz Geramifard is currently a machine learning manager at Amazon, leading the conversational AI team in Alexa Boston. He has led more than a dozen NLU Models for Alexa. Before joining Amazon, he was a postdoctoral associate at MIT's Laboratory for Information and Decision Systems. Alborz received his PhD from MIT working on representation learning and safe exploration in large-scale sensitive sequential decision-making problems in 2012. He completed his MSc at University of Alberta in 2008, where he worked on data efficient online reinforcement learning techniques. His research interests lie in machine learning with the focus on reinforcement learning, natural language understanding, planning, and brain and cognitive sciences. Alborz was the recipient of the NSERC postgraduate scholarships 2010-2012 program.

Panelist: Deepak Agarwal

Deepak Agarwal is currently leading AI and ML efforts across LinkedIn. He is most well known for his work on personalization and recommender systems and has published a book on the topic. He has also published extensively in top-tier computer science conferences and has coauthored several patents. He is a Fellow of the American Statistical Association and has served on the Executive Committee of Knowledge

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Discovery and Data Mining (KDD). Deepak regularly serves on program committees of various conferences in the field of AI and computer science. He is also an associate editor of two flagship statistics journals.

MODERATOR: Muthu Muthukrishnan

Muthu Muthukrishnan is a Distinguished Professor of Computer Science at Rutgers Univ. He has previously worked at Microsoft, Google, AT&T and Bell Labs. His research interest is in design and analysis of algorithms with applications to streaming, online auctions, IP networking, scheduling, string analysis and so on. He heads the Massive Data Analysis Lab (MassDAL) at Rutgers University.

MODERATOR: Andrew Tomkins

Andrew joined Google Research in 2009, where he serves as an engineering director, currently working on machine learning and understanding of geo data. Prior to these projects, he worked on measurement, modeling, and analysis of content, communities, and users on the World Wide Web. Before joining Google, he spent four years at Yahoo! serving as chief scientist of search, and eight years at IBM's Almaden Research Center, where he served as chief scientist on the WebFountain project. Andrew has authored over 100 technical papers and 90 issued patents. He received Bachelors degrees in Mathematics and Computer Science from MIT, and a PhD in CS from Carnegie Mellon University.