

## **Advancing AI through System and Packaging Innovations**

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### **Abstract:**

Interest in AI is exploding, and its applications are poised to increase dramatically for many years. Delivering the very large demands of compute, memory, and bandwidth required by AI is becoming a pervasive challenge in computing system design, creating a huge impetus to accelerate AI workloads through a mix of diverse components. Achieving high interconnectivity between different components has propelled heterogeneous integration to the forefront of technology focus. In this talk I will discuss how heterogeneous integration can meet the ever-growing demands of AI, examining both the architecture requirements for AI as well as the heterogeneous integration methods needed to enable an upward trajectory for system performance.

### **Bio:**

Dr. Arvind Kumar is a manager of AI Hardware Technologies at the IBM Thomas J. Watson Research Center. His research focuses on the requirements of AI systems and the heterogeneous integration innovations to accelerate them. He has presented a number of invited talks and served as a panelist and short-course instructor in this area at major conferences. In addition, he has chaired and organized a number of future computing events, including the 2017 IEEE Rebooting Computing Conference. Prior to concentrating on AI, he worked extensively on device design, characterization, and simulation for several IBM SOI technologies. He holds 30 U.S. patents and is an IBM Master Inventor. Dr. Kumar earned SB, SM, and PhD degrees in Electrical Engineering and Computer Science, all from MIT, and held an SRC graduate fellowship during his doctoral studies.