

KAN-ViT: A Parallel and Performance-Aware AI Framework for Advanced Brain Tumor Detection

AUGUST 13

**3-4 pm
CRF G025**

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Brain tumor detection is a critical medical imaging task where accuracy and efficiency can directly affect diagnosis and treatment planning. This seminar presents KAN-ViT, a parallel and performance-aware AI framework that integrates Vision Transformers with Kolmogorov-Arnold Networks for advanced brain tumor detection. Vision Transformers capture rich spatial and contextual patterns from medical images, while KANs model complex non-linear feature relationships for improved classification. By parallelizing the KAN component, the framework aims to improve scalability and computational efficiency without compromising diagnostic performance. The seminar will highlight the model design, its AI-driven diagnostic potential, and its connection to high-performance, performance-aware medical image analysis.

Dr. Vijayalakshmi Saravanan

Dr. Saravanan is an Assistant Professor at the University of Texas at Tyler in the Electrical and Computer Engineering Department and was a Visiting Faculty Scientist at Brookhaven National Laboratory. Her research spans high-performance computing, AI/ML for scientific data, big data analytics, and software/hardware co-design for multicore and heterogeneous systems. She earned her Ph.D. in Computer Science and Engineering through the Erasmus Mundus EU-Government Fellowship, with research conducted at Mälardalen University, Sweden, and Ryerson University, Canada. She later held a Schlumberger Faculty for the Future Fellowship at the University of Waterloo. Dr. Saravanan currently leads DOE ASCR-funded work on HPC and machine-learning-powered storage solutions for multimodal scientific computing. She is an ACM Distinguished Speaker and has served in editorial, program committee, and leadership roles across major computing venues. She is also active in broadening participation through IEEE WIE, ACM-W, Women in Big Data, and Women in HPC, WiARCH and has received recognition including the SoBigData++ Diversity Award in Italy.



DATA SCIENCE RESEARCH IN PROGRESS (RiP)

Led at UNM Health Sciences Center by Dr. Chris Amos and Dr. Avinash Sahu, Research in Progress is a collaborative meeting series for researchers—including staff, faculty, and students—who are interested in data science and AI or are those looking to incorporate these approaches into their research. These meetings will take place virtually monthly, bringing researchers from all around to present their ongoing work and receive feedback from peers. Our meetings will be typically held on the second Thursday of each month. To stay updated, please join our Google Group: groups.google.com/a/googlegroups.com/g/data-science-rip.

If interested in presenting your work, please sign up by contacting:

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Forward this email to colleagues, students or others who might be interested in joining!



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