



- Organization: The University of Texas at Austin
- Lead Investigator: Radu Marculescu
- Current Team Members:
 - Geffen Cooper (PhD student)
 - Mustafa Munir (PhD student)
 - Allen Farcas (PhD student)
 - Sofia Hurtado (PhD student)
 - Guihong Li (PhD student)
 - Md Mostafijur Rahman (PhD student)
 - Yuedong Yang (PhD student)
 - William Avery (MS student)



Principal Investigator

- Radu Marculescu has over 20 years of experience in computer systems modeling and optimization. He is a leader in the area of communication-centric design of embedded and cyber-physical systems. His recent research focuses on machine learning approaches for Edge AI and IoT applications.

Team

- 7 PhD students
- 1 Masters student

Infrastructure

- The research facilities in the ECE Department at The University of Texas at Austin and TACC offer a large number and variety of computers available for faculty and graduate students
- Experimental test-beds (e.g., NSF/Darpa and industry sponsored resources) are also available
- Real data on human mobility is also available

Our research brings together machine learning, network science, and systems design. Current research topics include machine learning and optimization for edge computing, cyber-physical systems design, social sensing and epidemics modeling.

Edge AI

- **Description:** EdgeAI refers to the ability to run various AI applications directly on edge devices, hence minimizing or even eliminating the need to rely on the Cloud
- **Examples:** Energy-aware machine learning techniques and hardware prototypes that leverage the network and the system characteristics to enable federated learning for IoT applications

Networks

- **Description:** Network science is crucial for our understanding of many applications of high societal relevance (e.g., social and technological networks, epidemics, biological networks)
- **Examples:** Control of disease spreading, adversarial attacks, opinion spreading, anomalies

Systems

- **Description:** Cyber-physical systems (CPS) bring together sensing, computation, communication, and control to enable a continuous interaction with the physical world
- **Examples:** Machine learning, optimization, and resource management for energy-efficient, secure, cost-effective, distributed computational platforms for computer vision applications

- Our group will benefit from collaborations in multiple areas
 - Cognitive psychology and behavioral science
 - Computational cognitive modeling
 - Decision making and decision making biases
 - Cyber security and cyber defense
- The types of research groups we seek to join:
 - Interdisciplinary groups involving people from both academia and industry

Contact Information

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