

Research Interests

<u>Research Interest</u>	<u>Faculty Member and Department</u>
Acoustics	Cherng, John (ME)
Actuators	Mi, Chris (ECE)
Alternative energy sources/fuels	Varde, Keshav (ME)
Application security	Seliya, Naeem (CIS)
Autoregressive Integrated Moving Average (ARIMA)	Ulgen, Onur (IMSE)
Artificial neural networks	Watta, Paul (ECE)
Automotive durability	Kang, Hong Tae (ME)
Automotive materials and processing	Mallick, P.K. (ME)
Catalysts	Shamim, Tariq (ME); Varde, Keshav (ME)
Character recognition and segmentation	Murphey, Yi Lu (ECE)
Common Messaging Calls (CMC) programming	Yoon, David (CIS)
Combustion	Shamim, Tariq (ME); Varde, Keshav (ME)
Composites	Mallick, P.K. (ME); Reyes-Villanueva, German (ME)
Computation theory	Elenbogen, Bruce (CIS)
Computational fluid dynamics	Sengupta, Subrata (ME)
Computational geometry	Shen, Jie (CIS)
Computational intelligence	Seliya, Naeem (CIS)
Computational study of thermal fluids	Li, Ben (ME)
Computer graphics	Shen, Jie (CIS); Yoon, David (CIS)
Continuous simulation	Ulgen, Onur (IMSE)
Control networks	Lee, Cheol (IMSE)
Crash and impact analysis	Chow, Chi (ME)
Cryogenics	Ratts, Eric (ME)
Damage mechanics	Chow, Chi (ME)

Data mining	Li, Xiangyang (IMSE); Seliya, Naeem (CIS)
Data security	Seliya, Naeem (CIS)
Database query optimization	Zhu, Qiang (CIS)
Databases	Medjahed, Brahim (CIS)
Digital imaging	Patel, Nilesh (CIS)
Discrete simulation	Ulgen, Onur (IMSE)
Distance learning	Awad, Selim (ECE)
Distributed systems	Guo, Jinhua (CIS)
DSP	Awad, Selim (ECE)
Education technology	Awad, Selim (ECE)
Electric vehicles	Natarajan, N. (ECE)
Embedded software	Shaout, Adnan (ECE)
Emissions heat transfer	Shamim, Tariq (ME)
Engineering materials	Argento, Alan (ME); Huntley, Hugh (ME); Mohanty, Pravansu (ME)
Ergonomics	Bhise, Vivek (IMSE); Knight, James (IMSE)
Failure analysis and design	Little, Robert (ME); Mallick, P.K. (ME)
Fatigue mechanics	Chow, Chi (ME); Kang, Hong Tae (ME); Little, Robert (ME)
Fluid mechanics	Zikanov, Oleg (ME)
Fracture mechanics	Chow, Chi (ME)
Fuel cells	Varde, Keshav (ME)
Fuzzy logic applications	Shaout, Adnan (ECE)
Gear system design and manufacturing	Zhang, Yi (ME)
Healthcare systems	Kachhal, Swatantra (IMSE)
Heat transfer	Ratts, Eric (ME)
Human factors	Bhise, Vivek (IMSE)
Human-computer interaction	Li, Xiangyang (IMSE)
Human-machine interface	Bhise, Vivek (IMSE)
Hybrid vehicles	Kim, Taehyung (ECE); Natarajan, N. (ECE)
Hydroforming	Kridli, Ghassan (IMSE)
Image processing	Lakshmanan, Shridhar (ECE); Miller, John (ECE); Shridhar, Malayappan (ECE); Zhao, Dongming (ECE)

Industrial applications	Shaout, Adnan (ECE)
Information quality	Li, Xiangyang (IMSE)
Information systems	Chandra, Charu (IMSE); Kampfner, Roberto (CIS); Li, Xiangyang (IMSE)
Infotainment	Patel, Nilesh (CIS)
Intelligent manufacturing	Chen, Yubao (IMSE); Kridli, Ghassan (IMSE); Orady, Elsayed (IMSE)
Intelligent power management	Murphey, Yi Lu (ECE)
Intelligent simulation environments	Zakarian, Armen (IMSE)
Intelligent systems	Akingbehin, Kiumi (CIS); Kampfner, Roberto (CIS)
Intelligent vehicle power networks	Mi, Chris (ECE)
Internet computing	Medjahed, Brahim (CIS)
Machine learning	Seliya, Naeem (CIS)
Machine tools	Orady, Elsayed (IMSE)
Machine vision	Miller, John (ECE); Zhao, Dongming (ECE)
Managing image data	Chang, Chai-hao (IMSE); Grosky, William (CIS)
Manufacturing design	Huntley, Hugh (ME); Mohanty, Pravansu (ME)
Manufacturing processes	Lee, Cheol; Mallick, P.K. (ME); Mitchell, William (ME); Orady, Elsayed (IMSE)
Manufacturing systems modeling and analysis	Zakarian, Armen (IMSE)
Material handling systems	Ulgen, Onur (IMSE)
Materials manufacturing	Li, Ben (ME)
Materials processing	Li, Ben (ME); Mallick, P.K. (ME); Mitchell, William (ME)
Mechanical design	Little, Robert (ME)
Mechanical power transmission	Zhang, Yi (ME)
Metal alloys	Reyes-Villanueva, German (ME)
Metal forming	Kridli, Ghassan (IMSE)
Multiple Input and Multiple Output (MIMO)	Xiang, Weidong (ECE)
Morphing	Shen, Jie (CIS)
Motor drives	Kim, Taehyung (ECE)
Multimedia databases	Chang, Chai-hao (IMSE); Grosky, William (CIS)

Nanotechnology	Mohanty, Pravansu (ME)
Neural networks	Lee, Cheol (IMSE)
Orthogonal Frequency-Division Multiplexing (OFDM)	Xiang, Weidong (ECE)
Operating systems	Tsui, Louis (CIS)
Pattern recognition	Shridhar, Malayappan (ECE)
Pedestrian detection	Murphey, Yi Lu (ECE)
Power electronics	Kim, Taehyung (ECE); Mi, Chris (ECE)
Production system modeling	Ulgen, Onur (IMSE)
Rapid prototyping	Orady, Elsayed (IMSE)
Real-time computing	Akingbehin, Kiumi (CIS)
Real-time networks	Richardson, Paul (ECE)
Reconfigurable computing	El Kateeb, Ali (ECE)
Reliability	Little, Robert (ME)
Road load prediction	Kang, Hong Tae (ME)
Semantic web	Medjahed, Brahim
Sensor networks	El Kateeb, Ali (ECE)
Sensors	Mi, Chris (ECE)
Signal processing	Lakshmanan, Shridhar (ECE)
Simulation	Li, Xiangyang (IMSE)
Smart antenna	Xiang, Weidong (ECE)
Software engineering	Maxim, Bruce (CIS); Seliya, Naeem (CIS)
Software radio	Xiang, Weidong (ECE)
Solid mechanics	Mallick, P.K. (ME)
Speech processing	Shridhar, Malayappan (ECE)
Spot weld fatigue	Kang, Hong Tae (ME)
Spray deposition forming	Mohanty, Pravansu (ME)
Statistical design of experiments	Knight, James (IMSE)
Structural dynamics	Argento, Alan (ME)
Supply chain management	Chandra, Charu (IMSE)
Tailor-welded aluminum blanks	Kridli, Ghassan (IMSE)
Thermal/fluid sciences	Varde, Keshav (ME)
Thermodynamics	Ratts, Eric (ME); Varde, Keshav (ME)

Time-series techniques	Ulgen, Onur (IMSE)
Tool design	Orady, Elsayed (IMSE)
Vehicle communications	Patel, Nilesh; Richardson, Paul (ECE)
Vehicle control	Richardson, Paul (ECE)
Vehicle detection	Murphey, Yi Lu (ECE)
Vehicle dynamics	Shim, Taehyun (ME)
Vehicle networks	Akingbehin, Kiumi (CIS); Guo, Jinhua (CIS); Patel, Nilesh (CIS); Richardson, Paul (ECE)
Vehicle tracking	Murphey, Yi Lu (ECE)
Vibrations (NVH)	Cherng, John (ME); Mei, Carole (ME)
Vision inspection	Murphey, Yi Lu (ECE)
Waste heat management and utilization	Sengupta, Subrata (ME)
Wireless LAN	Xiang, Weidong (ECE)
Workflows	Medjahed, Brahim (CIS)