Institution: University of North Texas

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Certificates, Registrations, Accreditations: SACS, AACSB, ABET, ACPHA, Accrediting Council on Education in Journalism and Mass Communications, American Academy of Forensic Science-FEPAC, American Chemical Society, American Library Association, American Psychological Association Commission on Accreditation, ASHA, Association for Behavior Analysis International, CEA, CACREP, Council for Interior Design Accreditation, CORE, Council on Social Work Education, National Association of Schools of Art and Design, NASPAA, NCATE, State Board for Educator Certification

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OVERVIEW

The University of North Texas is a Hispanic serving institute and a Carnegie-ranked Tier One public research university. The University's programs span all disciplines and provide service and leadership opportunities to more than 42,000 students. The University offers 94 masters, 37 doctoral, and 113 bachelor's degree programs.

RESEARCH CAPABILITIES

***Logistics and Supply Chain Management*:** transportation, warehousing, automation, strategic sourcing and materials management, simulation and physical distribution.

***Tribology of Aerospace Engine Components**:* friction energy loss reduction and extending life of autonomous air vehicle engines and aerospace assemblies.

***Light Weight Materials and Manufacturing*:** 3D printing and processing of light weight alloy, composite materials, and polymers, modeling and optimization of materials.

Autonomous Connected Vehicles Technologies: multispectral imaging and LIDAR/radar sensors for object detection, recognition, and navigations, multimode vehicle to vehicle communications and drone based broadband networks.

5G Technologies: *5G command/control/communication/collision avoidance of UAS, 5G enabled networking, big data analytics, and on edge computing with 5G connectivity.*

Artificial Intelligence, Machine Learning and Cyber Security:
AI/ML applications in Big Data analytics, Internet of Things, and Edge Computing (on the vehicle); automated decision making for route optimizations, collision avoidance, and safety redundancy; cybersecurity to support resiliency, privacy and security.

FACILITIES

Materials Research Facility. UNT's Materials Research Facility (MRF), located at Discovery Park, is one of the most advanced university research facilities in the nation for materials analysis — from the atomic to macro scales. The facility offers a suite of powerful analytical instruments used for true 3D characterization and processing.

Engineering Manufacturing Facility (EMF). EMF is a 9,700sf facility located at UNT's Discovery Park building and holds advanced manufacturing equipment and devices for the fabrication of functional prototypes and high-volume production parts.

BioAnalytical Facility. Equipment including mass spectrometers with advanced capabilities for separating and quantifying small molecules and macromolecules.

Genomics Center. Provides high-quality RNA and DNA sequencing analysis for UNT researchers and external clients.

Autonomous Systems Laboratory (ASL). ASL is involved in a number of projects including the AAM-NC, and Air Space Hazard Identification and Alerting Service (AHAS). ASL hosts numerous platforms built inhouse or purchased.

Center for Agile and Adaptive Manufacturing (CAAAM), houses pre- and post-processing equipment with industrial AM platforms for 3D printing of structural and functional parts, process modelling, monitoring and post process chacterizations.

PAST PERFORMANCE

Army Research Laboratory sponsored tribology research program in UAS engine components for multifuel compatibility, reliability and operation sustainability.

NSF studies of vehicular edge computing, ML based cooperative perception with mm wave communication, spectrum-agile resilient communication links for unmanned aerial vehicle traffic management in the sky, collaborative and integrated training on connected and autonomous vehicles and cyber infrastructure.

DARPA and ONR sponsored research in self-powered wireless sensors and interfaces for UAV, next generation of wireless power transfer network of unmanned aircraft systems, ultrawideband near-field probe system for antenna research.

Air Force Research Laboratory sponsored research in collaborative autonomous vehicle language for drones and air track/corridor RF scanning with hybrid electric lighter than air vehicles.