



Dr. Nick Duffield, FACM, FIEEE, FIET, Director
 Royce E. Wisenbaker Professor I, Electrical & Computer Engineering
 Texas A&M Institute of Data Science | <https://tamids.tamu.edu>
duffieldng@tamu.edu | (979) 845-7328 | <https://tx.ag/duffield>



TEXAS A&M UNIVERSITY
 Texas A&M Engineering Experiment Station
 TEXAS A&M AGRILIFE RESEARCH



TEXAS A&M Institute of Data Science

Thematic Labs: *Ecosystems for research, education & community in emerging areas of Data Science / AI / ML*

Scientific ML Lab (Braga-Neto)



- ML-guided acceleration of large-scale simulation
- Sparse data-driven hypothesis generation
- Areas: materials, reservoirs, supernova models

Data Justice Lab (Tang)



- Themes: diversity, inclusion, ethics, social justice
- Areas: health, education, economy, environment
- Algorithmic fairness, data equity, bias reduction

Design & Analytics for Urban AI (Ye)



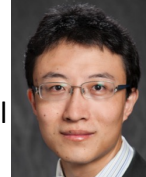
- Multi-scale simulations of cities and regions
- AI-based tools for urban problem solving
- Scenarios for sustainable growth & climate action

VIVID (Visualization) Lab (McNamara)



- Data interaction via multimodal human sensing
- Nonvisual displays, AR & VR, 3D materialization
- Renderings: climate change, impacts, hazards

Digital Twin Lab (Tao)



- Synchronized representations of real systems
- Data-driven models, scenario exploration, control
- Areas: clean energy, smart farming, public safety

Education & Training: *Collaborative development of programs, courses, and training*

Workforce Development (Green)



- Professional Education Workshops
- Customization: Data Science + X
- Online credentialing program

Student Data Science (Rodriguez)



- Competitions & hackathons
- Data Science literacy ambassadors
- Diversity, inclusion & HSI / HBCU engagement

For-Credit Programs (Retzer)



- Master of Science in Data Science
- UG Cert Data Analytics in Petroleum Industry
- MS in Energy / Energy Digitization Theme

Training Innovation (Narayanan)



- Minimesters for Data Science skills
- Data Science training for non-specialists
- Internship & career preparation

Operational Data Science (Pi)



- Texas A&M : a Living Lab for Data Science
- Partnerships leverage operational data assets
- Enhance: transport, facilities, research admin

Outreach & Engagement: *Students, faculty, operations, universities, industry, and national labs*

Industry Engagement (Green, Rodriguez)

- Industry affiliates program
- Data Science capstone & practicum sponsorship
- Career development & technical mentorship
- Sponsorship of scholarships, events, programs
- Domain-specific research consortia

Faculty Community (Ding)



- Seminars, tutorials, workshops
- Coffee Connections
- Career initiation fellows
- Research affiliates
- Course development program

Academic Outreach (Foucart)



- Visiting researcher program
- National Labs relations
- Peer Institute relations

Research Development (Tao, Duffield)

- Bring Your Own Data Online Consultancy
- Data Science research enablement
- Strategic research partnerships