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TEXAS A&M  
UNIVERSITY  
Texas A&M Engineering  
Experiment Station  
TEXAS A&M  
AGRI LIFE  
RESEARCH



TEXAS A&M  
Institute of  
Data Science

## Thematic Labs: Ecosystems for Research, Education & Community in Emerging Areas of Data Science / AI / Machine Learning

### Scientific Machine Learning Lab (Braga-Neto)

- ❑ Scientific Computation (SC) + Machine Learning (ML)
- ❑ Data-driven model discovery via large-scale simulation
- ❑ ML-guided acceleration of numerical simulations
- ❑ Materials Informatics, Reservoir & Supernova Models



### Data Justice Lab (Tang)

- ❑ Themes: diversity, inclusion, ethics, social justice
- ❑ Domains: health, education, economy, environment
- ❑ Algorithmic fairness, data equity, bias reduction
- ❑ Social media analysis, social sensing, NLP



### VIVID (Visualization) Lab (McNamara)

- ❑ Data interaction through multimodal human sensing
- ❑ Nonvisual displays, AR & VR, 3D materialization
- ❑ Communication, perception, immersion, engagement
- ❑ Analysis renderings: climate change, impacts, hazards



### Operational Data Science Lab (Duffield)

- ❑ Texas A&M as a Living Lab for Data Science
- ❑ Enhance: transport, facilities, research admin
- ❑ Leverage: urban science, disaster management
- ❑ Vertical Integration: knowledge, systems, practice



### Education (Rodriguez, Narayanan)

- ❑ Industry engagement to student ed.
- ❑ New program development
- ❑ MS Data Science (w/ Coll. Sci & Eng)
- ❑ Cert Data Analytics Petrol. Industry



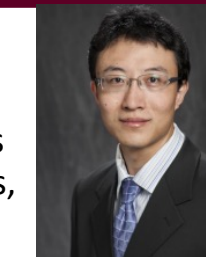
### Students (Rahman, Tao)

- ❑ Competitions, Hackathons
- ❑ Traineeship program
- ❑ Ambassador program
- ❑ Bring Your Own Data



### Project Development (Tao)

- ❑ Infrastructure and urban science
- ❑ Agriculture and hydroinformatics
- ❑ AgriLife, TWRI, ITEC, Geosciences,
- ❑ Funding: NIST, Microsoft, TX



### Industry and WFD (Green)

- ❑ Workforce Development & Consortia
- ❑ Computational Data Science Workshop
- ❑ Online Biomedical Data Science
- ❑ 200+ TAMIDS Research Affiliates



### Academic Outreach (Foucart)

- ❑ Visiting Researcher program
- ❑ National Labs relations
- ❑ Peer Institute relations



### Engaging Faculty (Ding)

- ❑ Seminars, Tutorials, Workshops
- ❑ Coffee Connections
- ❑ Career Initiation Fellows
- ❑ Course Development Grants

