Research Opportunities at NMSU

Computer Science Department

NM STATE UNIVERSITY

BE BOLD. Shape the Future.

Opportunities For Research

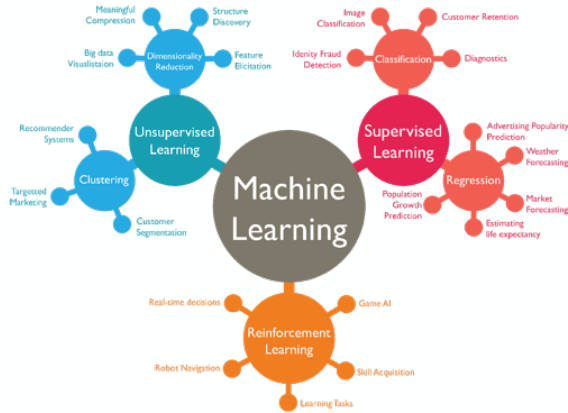Undergraduate Research during the Semester

Undergraduate Research/Internships during Summers (REU)

Undergraduate Honors courses and volunteering

Graduate Research Assistant, Teaching Assistant, Fellowships (National Science Foundation, Department of Defense, Department of Energy, Department of Education).

Our Future Through the CS Lens

ML and Data Analytics

Human Machine Interaction

Autonomous Driving

Our (cyber)spaces under attack

Cryptocurrencies

Future of Communications

Future Workplaces

Pictures from multi-sources on the Internet

Major Research Foci—CS@ NMSU

Artificial Intelligence
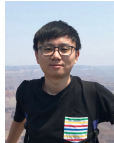

Enrico Pontelli (F)   Son Tran (F)

Logic and constraint programming; knowledge representation; planning; agent coordination

Cybersecurity, Networking, Cryptography

Roopa Vishwanathan   Tao Wang   Jay Misra (F)

Security and Privacy; Blockchains; Cognitive Radios; ML for Networks; Adversarial ML; Edge Computing; Smart Grid

Machine Learning and Data Mining

Huiping Cao (A)   Tuan Le   Parth Nagarkar   Inna Pivkina (A)   Shah Muhammad Hamdi

Data mining; machine learning; databases; deep learning; time series data, graph data, text data, multimedia

Human Computer Interaction

William Hamilton   Z O Toups (A)

Educational games; mixed reality; game design; team coordination; Live Media

Other Areas of Research

Software Engineering

Jonathan Cook **(F)**

Software Engineering; HPC Applications; Application Auditing and Monitoring
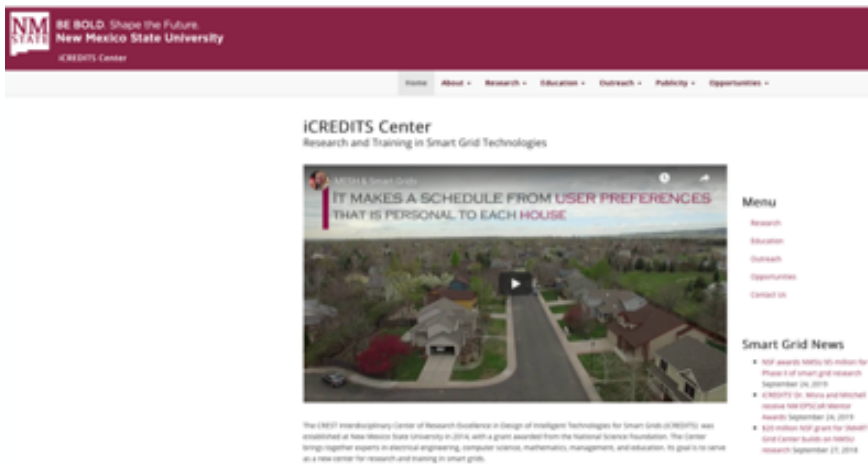
Bioinformatics

Joe Song **(F)**

Unsupervised pattern Discovery; Statistical Computing; Computational Biology

We are trying to build capacity in these two areas but have not been lucky with hiring faculty in the two areas.

Major Research Directions

- **Smart Grid**
- **Edge Computing**
- **Agent Coordination and Interaction**
- **Block Chain and Use in Different Applications**
- **Machine Learning and Data Mining for Classification and Prediction**
- **Data Analytics and Visualization**
- **Interpretable and Explainable AI**
- **Adversarial and Adversary-resistant ML**
- **Game Development; Mixed Reality; Team Coordination; Live Media**

Research Centers

iCREDITS Smart Grid Center (renewed by NSF) for five more years in 2020.

$5 million; AI; ML; Cybersecurity; HCI; Wireless; Quantum Computing; Hardware (across several departments)

Part of NM EPSCoR Smart Grid Effort (statewide effort on smart grid research)

$20 million (CS has ~$5 million); AI; ML; Cybersecurity; Economics; Power Systems

Rankings

❑ *csrankings.org*
  ❑ Overall: 122 out of 163 listed
  ❑ Same as Colorado State University (with 24 faculty; **we have 14 faculty**)
❑ Specialized areas
  ❑ AI (54), Security (84), DB (82), HCI (56)
  ❑ SE, Data Mining, Bioinformatics, Cryptography
❑ US News: Grad CS Rankings 133

❑ According to a recent survey by the university, we are at 171% in terms of publications and research funding w.r.t. peer R1/R2 universities.