University of Tennessee, Knoxville

- **Lead Investigator**: Jeremy Holleman
- **Current Team Members**: Itamar Arel, Doug Birdwell, Mark Dean
Research Areas of Interest

- **DeSTIN Deep Learning Framework**: 
  - Spatiotemporal pattern learning involves online clustering and feedback-based Bayesian inference
  - Combination of online clustering with feedback-based Bayesian inference

- **NIDA Neuroscience-inspired dynamic architectures and evolutionary algorithms**

- **Aggregating Resolution**: Combining low-resolution computational units to perform high-resolution systems
Unique Qualifications and Capabilities

- **Bio-inspired deep learning architectures** with high efficiency and proven robustness to analog hardware implementation
- **Neuroscience-inspired Dynamic Architectures**: Spike-based computational systems designed through evolutionary algorithms
- **Error modeling** of non-boolean computational systems
- **Memristor-based** learning system design
Teaming interests

• Seeking to join a research team with expertise in computational neuroscience, systems integration
• Utilize expertise of one or more UTK faculty members
  • Itamar Arel: High-performance machine intelligence and custom computing.
  • Doug Birdwell: Neuroscience-inspired dynamic architectures, evolutionary algorithms, dynamic systems, and high-performance data processing
  • Mark Dean: Digital design and architectures
  • Garrett Rose: Neuromorphic computing with memristors
  • Jeremy Holleman: Low-power analog computational system, aggregate-resolution computation
Contact Information

Jeremy Holleman

• Asst. Professor
• University of Tennessee, Knoxville
• jeremy.holleman@utk.edu
• 865-974-5442
• http://web.eecs.utk.edu/research/isis/