Welcome to 6th Annual TRICK OR RESEARCH

LIGHTNING TALKS
2:15 PM – 3:15 PM
RICH 106

Professors in CSE department will give 90 seconds presentation about their research area.

All faculty, staff and students are invited !!!

LAB TOURS
3:15 PM – 5:00 PM
Passports and maps will be available in HRBB 301.

Visit Labs, meet graduate students, see demos, have your passport signed and get treats!!

Participants with at least 5 stamps on their passport will be entered into drawing for exciting prizes!!!

Organized by: Aggie Women in Computer Science (AWICS)

Website: http://awics.cs.tamu.edu/Research/2015/index.html
Consistency Conditions for Distributed Storage

Identify conditions, explore tradeoffs between usefulness and efficiency, find lower bounds to show optimality,...
LENSS
Laboratory for Embedded & Networked Sensor Systems

Wireless Sensor, AdHoc, and Delay Tolerant Networking for Emergency and Tactical Response

Fault-tolerant, Secure and Energy Efficient Mobile Computing

Energy Efficient Protocol Design for Sensor Networks with Complex Topologies

Event Detection and Localization in Flow-based Cyber-Physical Systems

Wireless Security in Resource Constrained Mesh and Sensor Networks
Dezhen Song
Networked Robots Lab
Dezhen Song, Networked Robots Lab
http://telerobot.cs.tamu.edu (HRBB 316)

- Networked Robots and Cameras for Nature Observation
- Navigation and Scene Understanding for Mobile Robots
- Wireless Localization and Search of Transient Objects
Scott Schaefer
Graphics & Geometric Modeling
Graphics & Geometric Modeling
Scott Schaefer (http://faculty.cs.tamu.edu/schaefer)
Parallelizing Compilers for Multicores

Automatically transforms sequential code into parallel code using OpenMP:
- Uses SPECULATIVE parallelization technology
- Uses HYBRID ANALYSIS technology for combining Static and Dynamic Analysis
- Achieves full parallel coverage for > 25 codes.

A library of parallel generic Components similar to C++ STL
- Applications Developed in STAPL
  - Particle Transport – PDT
  - Bioinformatics – Protein Folding
  - Geophysics – Seismic Ray Tracing
  - Aerospace - MHD
Daniel Jimenez
Texas Architecture and Compiler Optimization
TACO Lab

- Texas Architecture and Compiler Optimization
  - Prof. Daniel A. Jiménez
  - Three current Ph.D. students, one M.S. student
  - Funding for more students
    - 2 current NSF research grants etc.
  - Collaborations with industry (AMD, Intel, Samsung)
  - General area:
    - Impact of code/compiler behavior on microarchitectural structures
    - Microarchitectural algorithms to exploit this behavior to improve performance
    - Ex. code layout optimizations, branch prediction, last-level cache management, memory scheduling, etc.
Andrew Jiang
Information Innovation Lab
Hamming: You saw Turing at Technion?
Shannon: Yes, I asked him a question.
Hamming: What question?
Shannon: Is P = NP?
Hamming: What did he say?
Shannon: He said the answer is
Jaakko Jarvi
Parasol Lab – Programming Tools, Techniques & Languages
What?

- **Software research:**
  - helping developers to do their work
- **Current projects:**
  - Declarative GUI programming
  - Functional reactive programming
  - Semantics of mouse clicks
  - Languages and libraries (C++)
Roozbeh Safari
Embedded Signal Processing Lab
Wearable Computers

Ubiquitous **monitoring** and **intervention** for the applications of health-care, wellness, entertainment and many more!
Overview

Vision: Enhance wearability and usability

Wearable Technology

Applications and medium-scale human subject studies

Signal processing

Orientation-independent activity recognition, motion artifact rejection techniques

Sensor and system design and development emphasizing wearability

Dry-contact EEG, wrist-worn PPG

Analytics in the cloud

Anomaly detection, repository and quality framework
American Sign Language Recognition

Use IMU and sEMG along with signal processing to interpret American Sign Language.

All images cited from Google Image.
Thank you!

Questions?

Roozbeh Jafari, rjafari@tamu.edu
http://jafari.tamu.edu
Ben Hu
Data Analytics at Texas A&M
Data Mining and Machine Learning

Social Informatics

Health Informatics

Statistical learning methods on handling heterogeneous, linked, dynamic, sparse, big data
Ruihong Huang
Natural Language Processing Lab
Building Effective and Practical Information Extraction Models

Ruihong Huang
Assistant Professor
Computer Science and Engineering
Texas A&M University
about Treasure island at the beginning of the book. Keeping nothing back but the barest outline of what happened, I will take up treasure never lifted, I take up my pen in the year of grace 17__ and go back to the time when my father kept the Admiral Benbow Inn and the brown old seaman with the sabre cut across one cheek, a dirty, livid white. I remember him looking round the cover and whistling to himself as he did so, and then breaking out in that old sea-song that he sang so often afterwards:

"Fifteen men on the dead man's chest--To-he-he, and a bottle of rum--in the hole old hollering voice that seemed to have been hoard and broken at the capstan. Then he rapped on the door with a bit of stick like a bandy leg that he carried, and when my father appeared, calling roughly for a glass of rum, he said, 'I ought to him, he drank slowly, he was a connoisseur, lingering on the taste and still looking about him at the cliffs and up at our signboard.

"This is a handy cove," says he at length; 'and a pleasant sittytated grog-shop. Much company, mate?' My father told him no, very little, as many the more was the pity.

"Well, then," said he. 'This is the berth for me. Here you, matey,' he cried to the man who trundled the barrow, 'bring up alongside and help up my chest. I'll stay here a bit,' he continued. 'I'm a fair man; rum and bacon and pigs, what I want, and that head up there for to watch ships off. What you mought call me? You mought call me captain. Oh, I see what you're at there'; and he threw down three or four gold pieces on the threshold. 'You can tell me when I've worked through that,' says he, looking as fierce as a commander.

And indeed bad as his clothes were and coarsely as he spoke, he had none of the appearance of a
information extraction

One stop solution to extract structured information from unstructured data.
Research Themes

- Investigating and Modeling Linguistic Properties and Phenomena
- Exploring Weakly Supervised Learning Approaches to Enable Quick Adaptation
**Goal:** make complex software more reliable, secure, scalable, and faster

**How:** fundamental software analysis techniques and practical tools

- Debugging
- Verification
- Intelligent Code Search
ASER: Software Engineering Group

We welcome new members!

http://parasol.tamu.edu/groups/huanggroup/
Tracy Hammond
Sketch Recognition Lab
activity recognition algorithms that can

- identify and understand a person's behavior and actions
- infer and predict a person's intentions and future choices

wearable technologies and sensors that can

- enhance a person's senses
- communicate environmental and personal information to the wearer
- help people be more cognizant of their environment
- enable people to make better choices.
Tim Davis
Parasol Lab - Computational Science
Tim Davis: computational science, sparse matrices
Yoonsuck Choe
Brain Networks Lab
Yoonsuck Choe: Brain Networks Laboratory

- Computational neuroscience
- Computational neuroanatomy
- Neuroinformatics
Algorithms & Applications

Nancy Amato (http://parasol.tamu.edu/~amato)

Motion Planning
- Robotics, intelligent CAD, Animation

STAPL: Parallel Algorithms & Libraries
- Physics: Particle Transport
- Bioinformatics: Protein Folding
- Geophysics: Seismic Ray Tracing

Computational Geometry

Computational Biology

Deformation

Multi-Agent Systems
John Keyser
Geometry and Graphics
John Keyser

*Computer Graphics*

- Physically-Based Simulations for Graphics
- Geometric Modeling
- Brain Networks Lab
- Other
Happy Trick-or-Researching

Lab Visits (Today, 3:15 PM – 5:00 PM)

• Passports are available for pick up at HRBB 301

• Raffle:
  – Submit your stamped passport to HRBB 301 or HRBB 425 (Parasol Lab) today by 5:00 PM or tomorrow by 3:00 PM.
  – Passports with at least 5 stamps from at least 2 different buildings will be entered in the raffle for prizes!!!
  – Winners will be announced next week!!!

• Website: http://awics.cs.tamu.edu/Research/2015/index.html