# Creating Entrepreneurial University
# LexisNexis/FAU Success Story


**Borko Furht**

**Florida Atlantic University**

**Boca Raton, Florida**


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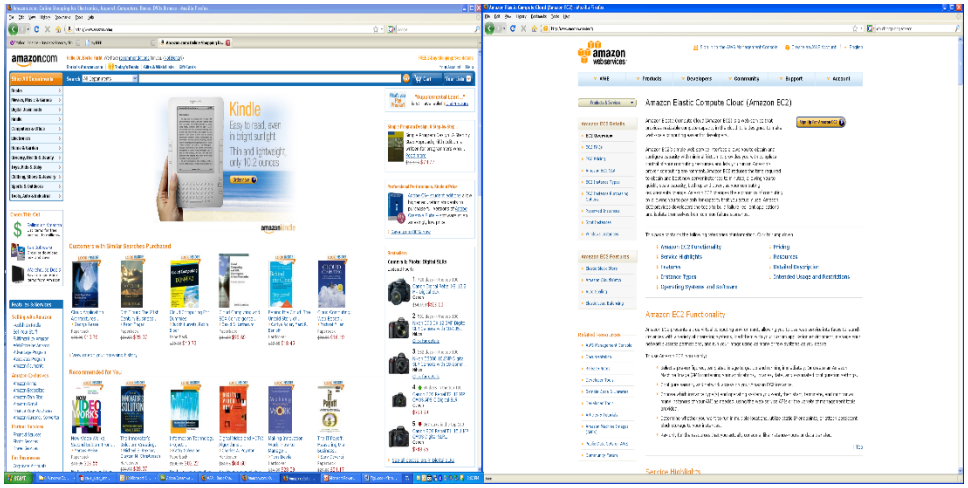
# Successful Companies
# Google, Apple, Amazon

Apple's ecosystem – redefined mobile systems and entertainment


Two personalities of Amazon
Redefined computing with cloud computing

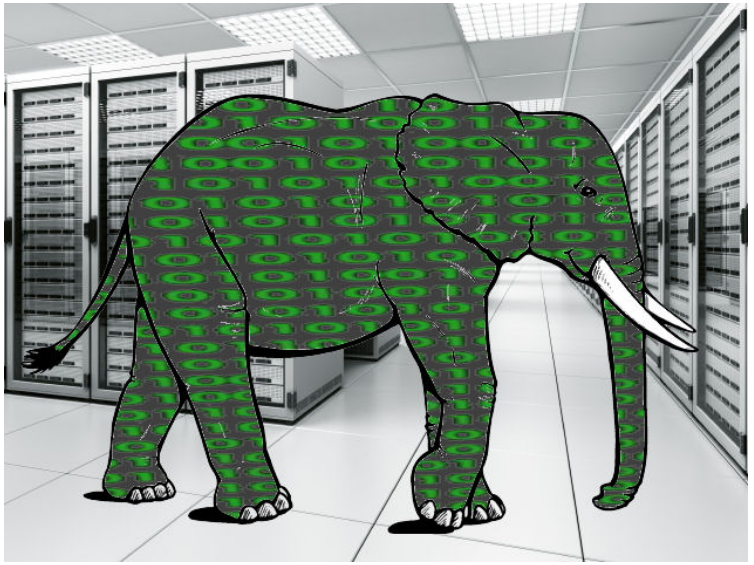



Google images

Google redefined search on the Internet and much more …

# Successful Companies
# LexisNexis Risk Solutions

- LexisNexis Risk Solutions re-defined data analytics and big data
- LexisNexis is a leader in providing essential information to help customers across industry and government assess, predict and manage risk
- Combining cutting-edge technology, unique data and advanced scoring analytics, LexisNexis provides products and services that address evolving client needs in the risk sector while upholding the highest standards of security and privacy



# We Redefined Engineering Education

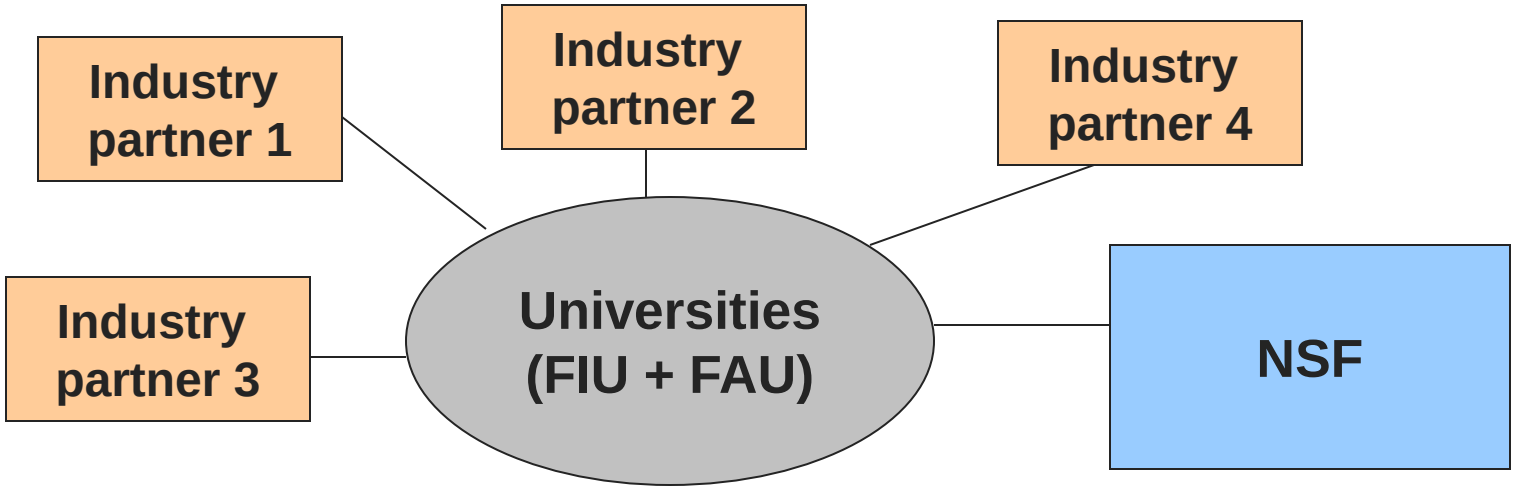
- By creating Entrepreneurial University
- Following technology trends
  - Big Data
  - Cloud Computing
  - Social Networks
  - 3D Technologies
  - Augmented Reality
  - Mobile Systems and Applications
  - High-Performance Computing
- Creating new, interdisciplinary programs
  - Master Program in Information Technology and Management
  - Master Program in Media, Technology, and Entertainment
  - Master Program in Bioengineering
- Offering New, “Hot” Courses
  - Data Intensive Computing
  - iPhone Programming
  - Android Programming
  - Social Networks
  - Game Programming
  - Computer Animation
  - Graphics Programming
  - Cloud Computing
  - Video and Multimedia

# Our Model of The Entrepreneurial University

- Drastic reduction of industry research funding = opportunities for universities
- To become incubators of entrepreneurship and innovation, universities must practice entrepreneurship
- This “re-conceptualization” calls for new, non-traditional arrangements

- NSF Industry/University Cooperative Research Center (I/UCRC) for Advanced Knowledge Enablement (CAKE)
- Collaboration with FAU R&D Park
- Strong and active Industry Advisory Board
- Industry-University laboratories

# Model of the I/UCRC




- Industry partners pay the memberships ($5K to $50K++ per year)
- NSF sponsors the Center ($50K to $200K per university per year)
- Industry Advisory Board selects the research projects
- Industry members select the products for commercialization – no royalties
- Similar to MIT Media Lab model

# NSF-Sponsored I/UCRC Center for Advanced Knowledge Enablement

**FAU SITE with 29 total industry members)**


- FAU Industry Members
  - LexisNexis
  - ProntoProgress
  - Wigime, Inc.
  - Relli Technologies
  - SmartVCR, LLC
  - ILS Technology
  - Avocent/Emerson Corp.
  - Jansyl Technologies
  - Tecore Networks
  - Aware Technology
  - Adventure Automation
  - LastBestChance, LLC
  - Hillers Electrical Engineering
  - Tecore Wireless Systems
  - Soren Technology
  - Mobile Help
  - Motorola Mobility (Google)
  - Video Semantics
  - Omega Optics
  - Plangent Technology
  - JM Family (25K)
  - VideaStream
  - M.R. Research
  - Personics Labs
  - C-Capture
  - Florida Solar Energy
  - Bridging Nations Foundation
  - NOA, Inc.
  - Wireless Sensor, LLC

30+ research projects funded with total $1.8M in cash plus $2.8M in software and equipment from industry members and $700K from NSF

# IAB Meeting


Next Meeting: October 23 and 24
Flavio and Edin will actively participate

# Joint University/Industry Labs

9 Research Labs
6 Instructional Labs

# Cloud Computing Center

# Collaboration with Companies in FAU Research Park

- 27 companies with 900 high-tech jobs
- Incubator with 24 start-up companies

# Collaboration with UN

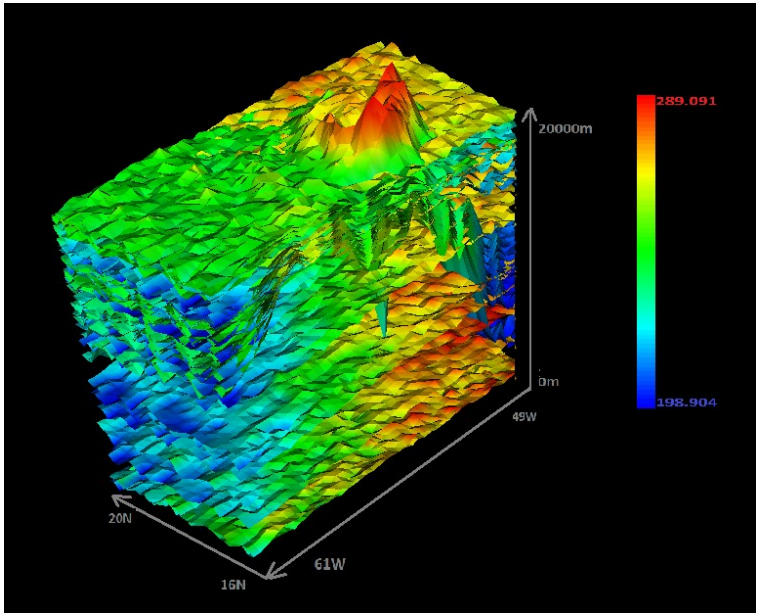
- “Education for All”
- Forum at UN (May 16) - Building Public-Private partnerships for Education through Science, Technology, and Innovation

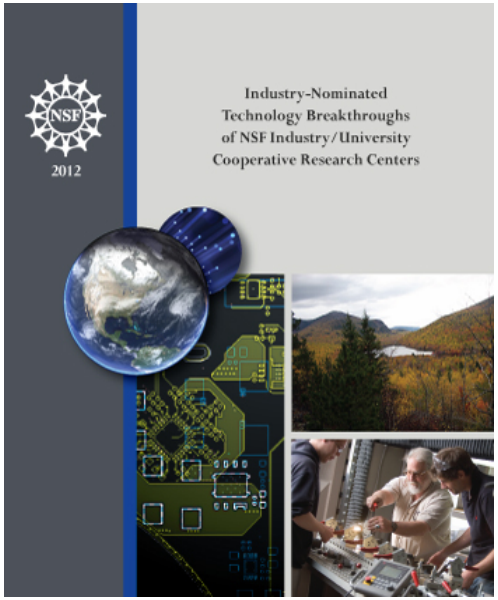

# Developing Machine Learning Algorithms on HPCC/ECL Platform

- LexisNexis Project
- Project objective: to extend HPCC/ECL to perform classification and regression using a wider range of machine learning algorithms
- Research Team at FAU: Dr. Taghi Khoshgoftaar, PI, PhD Students: Victor Herrera and Maryam Najafabadi

# Distributed Cloud Computing Study to Provide 3D Visualization Services for Climate Data on Demand

- NSF- sponsored project, jointly with FIU and University of Maryland
- New visualization techniques to provide 3-D temperature profiles




Compendium of Industry-Nominated Technology
Breakthroughs of NSF I/RCRs

# Automating Asset Management in Datacenters

+

Capture Rack ID + Asset image with iPad

Identify asset from image and compare with the entry in the database

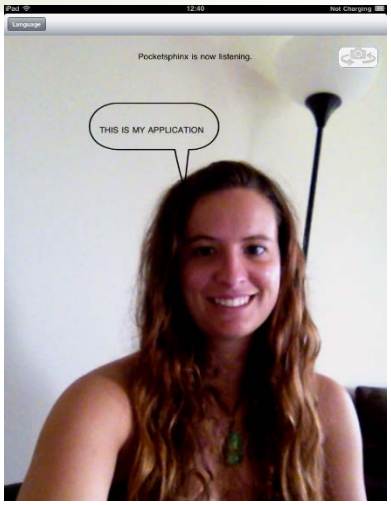
Overlay realtime server health on iPad

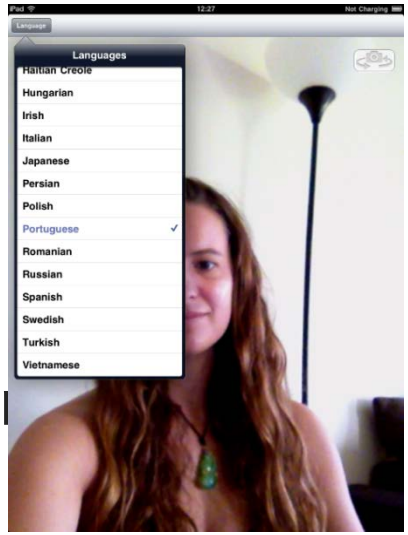
Raise alarm if servers are misplaced

- Use image processing to identify the type, make, and model of assets on a rack and compare with database entries
- An application on an iPad to automate and simplify asset tracking
- Industry partner Avocent/Emerson

# Augmented Reality Methods for Hearing Augmentation

- Master thesis, Julie Carimignani
- iHear includes speech recognition and face detection
  - OpenEars: Open source speech recognition
  - Five thousand words dictionary
- Face Detection
  - OpenCV Face Detectio



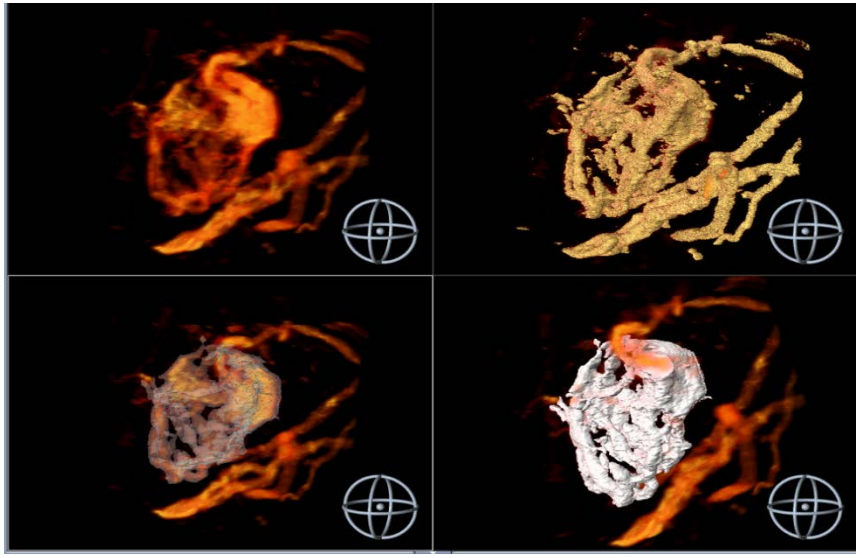



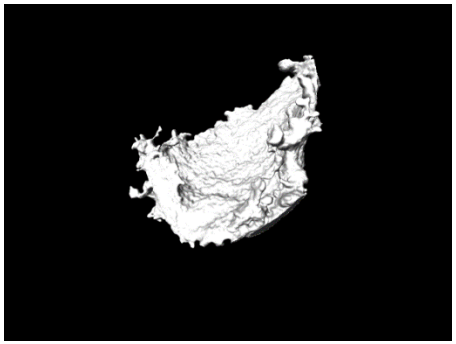

# Identification of Sleeping Drivers

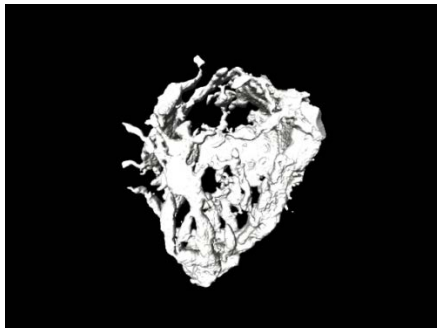
- Drowsiness causes 7% of all road accidents and may to blame a full 18% of fatal collisions
- Eye-tracking technology
- iPhone application that detects that the eye is closed for longer than a user-defined interval – it sounds an alarm.
- Industry partner: LastBestChance, LLC

# Algorithms for 3D Image Reconstruction and Segmentation

- Analyze a large dataset of microscopic imagery and remove structures that are not part of the 3D calyx of Head
- Challenge of the project is to model the knowledge of the domain expert, who is capable to identify and manually eliminate unwanted structures, into an innovative software image processing algorithm
- Industry Partner: Max Planck Florida Institute

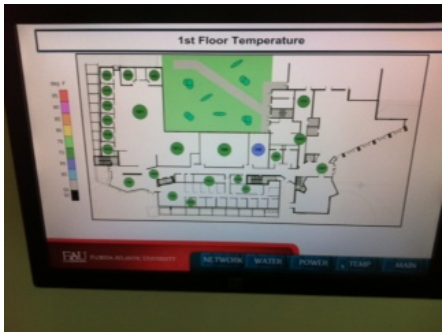


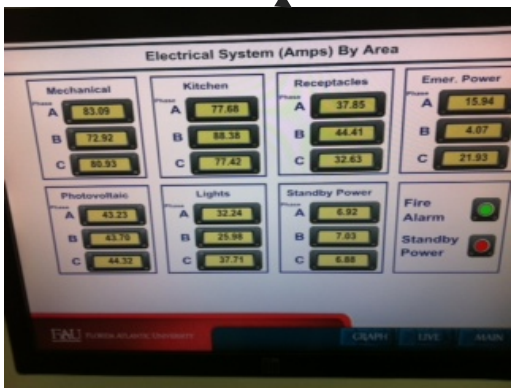




# Smart Building Design

- NSF Center with industry partners ILS Technology and Aware Technology
- Using sensors and available measurements develop algorithms for power optimization and building management



# I/UCRC Next Five Years

- Serve as extended research/development arm for industry members
- Work with current members and attract new members
- Prepare and submit joint research proposals (with industry partners) to government agencies
- Produce joint publications, presentations, and books
- Produce joint patents and IPs
- Assist in commercialization of the developed products and software