Institute for Cyber Security

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UTSA Cyber Security Programs

Hallmarks
• Diversity
• Maturity
• Excellence

Institute for Cyber Security

Computer Science
College of Sciences

Information Systems
College of Business

Computer Engineering
College of Engineering

World-Leading Research with Real-World Impact!
Diversity
- 3 Departments across 3 Colleges
- Core security faculty plus numerous collaborators
- World class labs: FlexCloud, FlexFarm
- Research, Education, Workforce development, Cyber competitions
- Hispanic minority serving institution

Maturity
- Major and sustained push in cyber security since 2000
- Established degrees and concentrations
- NSA CAE for Education and for Research

Excellence
- Rated number 1 in the country by a HP sponsored study in 2013
- Creating first BS degree in Cyber Security in USA to be offered by a research intensive CS Department
- Effectively a dual major in CS and Cyber Security
- Excellent placement record for students at all levels
ICS Philosophy

- Systems
- Applications
- Technologies
- Foundations
- Developers at 100’s of companies world wide
- Very few Universities

OpenStack Cloud Platform

Dashboard

Network

Provides UI for

Provides network connectivity for

Provides volumes for

Block Storage

Compute

Provides UI for

Provides Auth for

Stores images in

Image

Provides Auth for

Stores disk files in

Object Storage

Identity

Provides UI for

Provides Auth for

Provides Auth for

Provides Auth for

Provides Auth for

Provides Auth for

http://www.nolinea.com

World-Leading Research with Real-World Impact!
Access Control

Discretionary Access Control (DAC), 1970

Mandatory Access Control (MAC), 1970

Role Based Access Control (RBAC), 1995

Attribute Based Access Control (ABAC), ????

Human Driven

Automated Adaptive
Risk Adaptive Access Control (RAdAC)
Provenance Aware Systems

Access and Usage Control of Data and its Provenance

Data Forensics (e.g., SIM tools)

Provenance

data

etcetera

Data Trustworthiness (e.g., sensor networks)

Data Privacy (e.g., track hospital records)

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World-Leading Research with Real-World Impact!
Other Research Areas

- Social network and social computing security
- Integrated models for access control, compliance and forensics
- Smart grid security
- Malware models and analysis
- Botnet detection and mitigation
- .................