Welcome to the Summer Workshop on Cybersecurity for Faculty of Community Colleges in Texas

The Program

July 14-18, 2014

Computer Science Department
Texas Tech University
Welcome To Texas Tech University

• It is our great pleasure to have you here

Help in ...****...

(It is encrypted, will be decrypted in the end)
The Goals

• Promote Cybersecurity research, practice, and education in the Texas
• Build a cybersecurity capacity
• Introduce more cybersecurity related courses into the curricula offered at community colleges
• Transfer students from community colleges to four-year higher education institutes
The Goals
Building a Community

• West Texas Cybersecurity Consortium

• Facebook Page

• The Web Site
  • http://cybersec.orglearn.com
The Organizers

Texas Tech University
- Dr. Rattikorn Hewett
  - Software Security, Network Security
- Dr. Akbar Siami Namin
  - Information and Data Security, Software Security

Angelo State University
- Dr. James Phelps
  - Cyber evidence and Forensic
- Dr. Fred Wilson
  - An Introduction to cybersecurity

University of California, Riverside
- Dr. Hamed Rad
  - Smart Grid Security

Evaluator
- Dr. Fethi Inan, Texas Tech University
The Graduate Students (Ph.Ds)

• Running Hands-on Experience Sessions
  – Alaa Darabseh
  – Elham Hojati
  – Sara Sartoli
  – Xiaozhen Xue
The Keynote Speakers

• Fatih Ari and Raymond Flores
  – College of Education, Texas Tech University

• Jeffrey Zhang
  – Moving Target Defense Research
  – Texas Tech Application Development Section
The Lab Work

• A group from the Sandia National Lab
  – Malware Analysis
The Participants

1. Jason Brown, Texas A & M University
2. Trevor Chandler, Houston Community College
3. Abel Danny Dominguez, El Paso Community College
4. Ervin Frenzel, Amarillo College
5. Misty Frenzel, Amarillo College
6. Gregg Greer, Lubbock Christian University
7. Debbie Lamprecht, Rangers College
8. Rajiv Malkan, Lone Star College – Montgomery
9. Nicole Mitchell, Lamar Institute of Technology
10. Delfina Najera, El Paso Community College
11. Yu-Pa Ng, San Antonio College
12. Alexey Petrenko, Austin Community College
13. Lopa Roychoudhuri, Angelo State University
14. Diane Underwood, Southwest Texas Junior College
15. Ben Walton, South Plains College
16. Ira Wilsker, Lamar Institute of Technology
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<tr>
<th>Date</th>
<th>8:00-9:15</th>
<th>9:30-10:45</th>
<th>11:00-12:15</th>
<th>Lunch</th>
<th>1:30-2:45</th>
<th>3:00-4:15</th>
<th>4:30-6:00</th>
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<tr>
<td>7/14/2014</td>
<td>Welcoming Session</td>
<td>Topic II (Namin)</td>
<td>Topic II (Namin)</td>
<td>Hands-on Experience</td>
<td>Topic IV (Hewett &amp; Namin)</td>
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<td>Monday</td>
<td>Check In</td>
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<td>7/15/2014</td>
<td>Keynote</td>
<td>Topic III (Hewett &amp; Rad)</td>
<td>Topic III (Hewett &amp; Rad)</td>
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<td>Topic V (Rad)</td>
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<td>7/16/2014</td>
<td>Lab Work</td>
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<td>7/17/2014</td>
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<td>Hands-on Experience</td>
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<td>Participants Presentation</td>
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<td>7/18/2014</td>
<td>Panel Discussion</td>
<td>Topic I (Wilson &amp; Phelps)</td>
<td>Topic I (Wilson &amp; Phelps)</td>
<td>Topic VI (Phelps)</td>
<td>Topic VI (Phelps)</td>
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<td>Pi's Meeting (Post)</td>
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**Topic Description (Instructors)**

2. Information and Data Security, (Leaders: Siam Namin)
5. SmartGrid Security, (Leaders: Mohsenian-Rad)
6. Cyber Evidence and Forensics, (Leaders: Phelps)

**Notes:**
1. Each Session is 1:15 of length
2. Two sessions are allocated for each topic
3. There are welcoming and closing sessions
4. 3 other sessions are allocated for invited talk and panel discussion
5. 4 sessions are allocated for "hands-on Experience"
6. 3 sessions are allocated for "participants Presentations"

**The locations:**

- All lectures will be held in the Advanced Technology Learning Center (ATLC), PC Lab 1 (in the basement of the Texas Tech Library)
- The Welcoming, Closing, and Invited sessions will be held in the Advanced Technology Learning Center (ATLC), PC Lab 1 (in the basement of the Texas Tech Library)
- The Pi's Meeting will be held in the Computer Science Department, the main Conference Room (205 2nd Floor) or at the Workshop place (to be decided)
The Workshop History

• 2013
  – For the first time offered
  – 16 faculty from community colleges participated
  – For one week
  – Six topics were covered
  – The participants were mentored with the purpose of
    • Building a community of cybersecurity
    • Encouraging the participants to introduce a new course or a new module in cybersecurity into their curricula
Topics to be Covered and Discussed

• Six technical topic to give the participants a holistic view of cybersecurity including:
  1. Computer Science,
  2. Smart Grids and Power Plans,
  3. and Cyber Crime and Forensics
Topic I – Cybersecurity Fundamental

• Basic concepts in computer security, threat analysis, and security development life cycle

   – Topics:
     • Introduction to Security
     • Security Technology
     • Operational and Physical Security
     • Sample Course Modules and Syllabus
Topic II – Information and Data Security

• An overview of the principles and approaches to information and data security
  – Topics:
    • Data Security Principles
    • Security Attacks
    • Security Services
    • Model of Network Security
    • Cryptography.
    • Symmetric Encryption
    • Asymmetric Encryption.
    • Authentication.
    • Digital Signature
Topic III – Network Security

• Basic concepts in network security and cyber attack and defense mechanisms

— Topics:

• Introduction to Network Security
• Network Defense and Technical Operational Security
• Network Layer Security
• Network Denial of Service
Topic IV – Software Security

• Basic security issues in software system designs, and techniques for holistic approaches to verification and assessment of security properties of software systems

– Topics:
  • Secure Software Development Life Cycle
  • Web Security
  • Vulnerability Case Studies
Topic V – Smart Grid Security

• An overview of basic concepts in smart grid and smart grid security and privacy
  – Topics:
    • Introduction to Smart Grid
    • Smart Grid Security and Privacy Challenges
    • Case Studies
    • Defense Mechanism
Topic VI – Cyber Evidence and Forensics

- Basic concepts in evidence identification, collection, storage, and forensic analysis under current U.S. law
  - Topics:
    - Introduction of cybercrime law
    - Cyber evidence collection
    - Cyber Evidence Analysis
    - Sample Courses and Syllabus
Topic VII – Hands-On Experiences

- Damn Vulnerable Web Applications
- WebGoat and OWASP
- Backtrack Environment
The Procedure and Expectations

Pre Workshop

• Fill out and sign the participation agreement
• Fill out the pre-workshop evaluation form
• Build a team of 1 or 2
  – Work together and develop the syllabus of a new course or module that you think you can introduce/integrate into your curriculum
  – Give a short technical presentation of your selected topic that will be part of your course module
  – Give a short description of your syllabus
The Procedure and Expectations During the Workshop

• Fill out pre/post session evaluation forms
• Be in time
  – 8:00 to 6:00 for one week
• Give us feedback on how to improve the workshop
The Procedure and Expectations
Post Workshop

• Fill out the post workshop evaluation
• Fill out the application plan form and participate in mentorship activities
• Present your course module and a summary of technical part (Thursday afternoon)
  – Depending on the number of teams, the time will be allocated
    • 20 – 30 presentation time minutes each team
The Help Needed

Help in Building a Capacity and a Community of Cybersecurity Research and Education In Texas

(The decrypted message)