NICE K12 Cybersecurity Education Conference
10 December 2019

znjp@calpoly>can we fix
          what's wrong with
          computer security
          education
          in an alternate
          reality?

> cyber

CNBC

Stocks, Commodities, Data & Unifees | 141

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Want job security? Try cybersecurity

Jennifer Schlesinger
Sunday, 6 Dec 2015

2.2K SHARES

26 COMMENTS Join the Discussion

CNBC

Cyber security sector struggles to fill skills gap

Nicholas Megaw in London

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The Telegraph

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Demand for cyber security experts quadruples following high-profile hacks

"Christmas has come early" for cyber security experts following Ashley Madison, Sony and TalkTalk hacks, pushing hiring in the UK jobs market to

OIG
Top Management and Performance Challenges Facing the Department of Justice

November 11, 2015

MEMORANDUM FOR

burningglass®
CAREERS IN FOCUS

Job Market Intelligence: Cybersecurity Jobs, 2015

taulbee survey

Table D4. Employment of New PhD Recipients By Special...

	Artificial Intelligence	Computer-Supported Cooperative Work	Databases/Information Retrieval	Graphics/Visualization	Hardware/Architecture	Human-Computer Interaction	High-Performance Computing	Informatics: Biomedical/	Information Assurance/Security		Information Systems
North American PhD Granting Depts.											
Tenure-track	10	0	10	7	4	4	4		4	0	4
Researcher	8	0	2	1	3	0	2		2	0	0
Postdoc	17	1	7	12	0	6	4	1	5	0	4
Teaching Faculty	4	0	2	0	1	0	0		3		3
North American, Other Academic											
Other CS/CE/I Dept.	4	0	3	1	2	1	2		1		1
Non-CS/CE/I Dep.	0	0	1	0	0	0	0		1		0
North American, Non-Academic											
Industry	35	0	73	57	47	23	27		32		24
Government	8	0	2	2	0	1	2		5	3	0
Self-Employed	2	1	1	3	1	0	1		0	1	0
Unemployed	0	0	0	0	1	0	0		2	1	0
Other	1	0	2	0	3	0	1		0	0	0
Total Inside North America											
	139	2	108	83	71	38	43	51	65	36	36

**Table B7. Bachelors Degrees Awarded by Gender and Ethnicity, From 125 Departments Providing Breakdown Data**

	CS					CE					I					Ethnicity Totals	
	Male	Fem	N/R	% of M*	% of F*	Male	Fem	N/R	% of M*	% of F*	Male	Fem	N/R	% of M*	% of F*	Total	%
Nonresident/Alien	657	168	59	8	13	139	26	19	8	12	87	34	0	4	7	1,138	8.3
Amer. Indian or Alaska Native	31	4	1	0	0	12	1	1	1	1						53	0.4
Asian	1,598	421	60	20	32	413	76	10	25	34	331	103	0	15	20	2,952	20.6
Black or African American	245	54	15	3	4	53	7	0	4	3	152	54	0	6	11	538	
Native Hawaiian/ Pacific Islander		6	0	0	1	5	2	0	0	1	7	1	0	0	0		
White	4,025	539	225	60	41	845	83	42	51	37	1,230	265	1	50	51	8,123	56.7
Multiracial, not Hispanic	125	28	11	2	2	31	5	0	2	2						218	1.7
Hispanic, any Race	550	83	3	7	6	145	16	2	9	7	223	47	0	11	9	1,106	7.7
Total Res & Ethnicity Known	8,175	1,303	389			1,651	222	74			2,006	516	1			14,339	
Resident, Ethnicity Unknown	340	54	11			58	8	4			50	13	0			576	
Not Reported (N/R)	1,821	344	147			346	29	25			22	8	22			2,329	
Gender Totals	10,345	1,701	182			2,055	259	25			2,110	537	23			17,232	
%	85.5%	14.1%				81.8%	11.2%				79.7%	20.3%					

* % of M and % of F columns are the percent at that gender who are of the specified ethnicity, of those whose ethnicity is known.
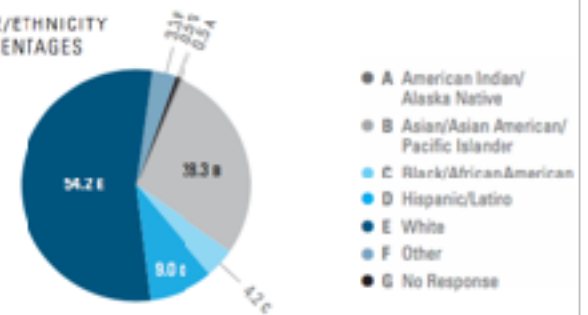
The Future Workforce — The High School Pipeline:
AP Mathematics and Science Exams 1997-2009
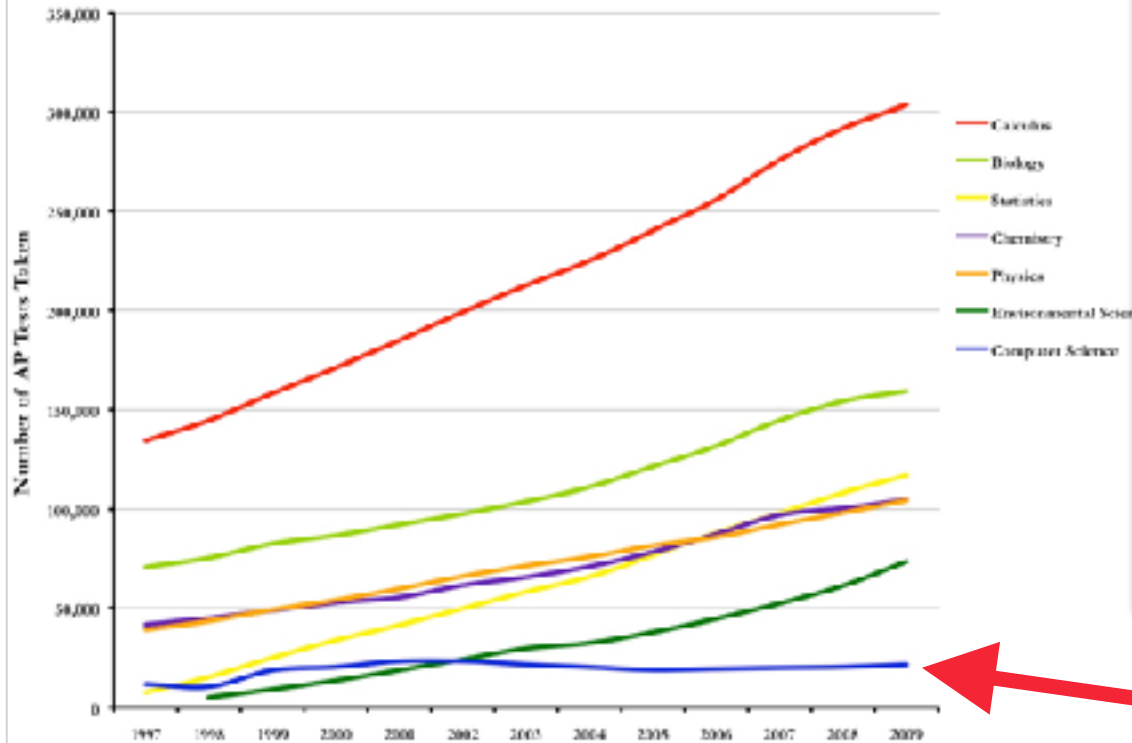
AP Exam Takers, Class of 2013

computer science

Computer Science Curricula 2013

Curriculum Guidelines for Undergraduate Degree Programs in Computer Science

December 20, 2013

The Joint Task Force on Computing Curricula
Association for Computing Machinery (ACM)
IEEE Computer Society

Core Hours in Knowledge Areas

An overview of the number of core hours (both Tier-1 and Tier-2) by KA in the CS2013 Body of Knowledge is provided below. For comparison, the number of core hours from both the previous CS2008 and CC2001 reports are provided as well.

Knowledge Area	CS2013 Tier1	CS2013 Tier2	CS2008 Core	CC2001 Core
AL-Algorithms and Complexity	19	9	31	31
AR-Architecture and Organization	0	16	36	36
CN-Computational Science	1	0	0	0
DS-Discrete Structures	37	4	43	43
GV-Graphics and Visualization	2	1	3	3
HCI-Human Computer Interaction	4	4	8	8
IAS-Information Assurance and Security	3	6	--	--
IM-Information Management	1	9	10	10
IS-Intelligent Systems	0	10	10	10
NC-Networking and Communication	3	7	15	15
OS-Operating Systems	4	11	18	18
PBD-Platform-based Development	0	0	--	--
PD-Parallel and Distributed Computing	5	10	--	--
PL-Programming Languages	8	20	21	21
SDF-Software Development Fundamentals	43	0	47	38
SE-Software Engineering	6	22	31	31
	18	9	--	--

> **self-selected student body;**
> **established habits &**
> **limited runway;**
> **security is no longer an**
> **elective**
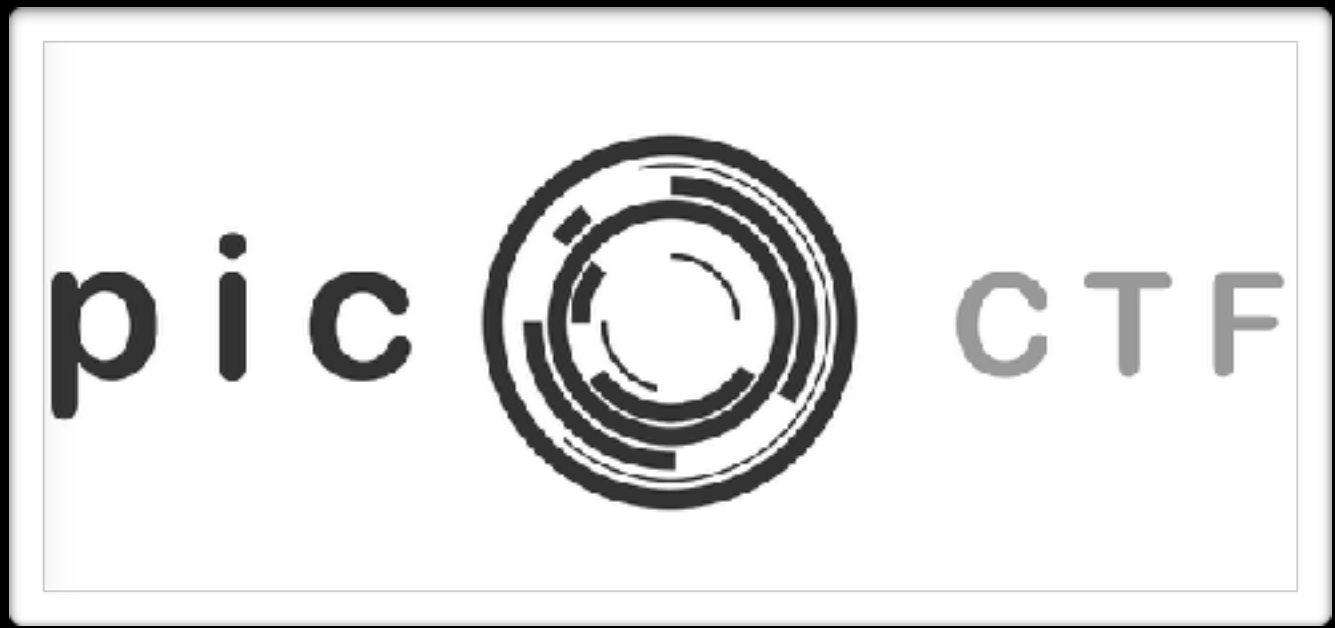
…can they be more?

yes

authentic context

counterfactual thinking

yes

maintain engagement

social & collaborative

Enter Access Code:

1 2 3

4 5 6

7 8 9

0

ACCESS DENIED

Debug Mode: SHA1 Hash Mismatch

4e1243bd22c66e76c2ba9eddc1f91394e57f9f83 !=
2d1b30542e3bcc8467096e4407e1276d026e4169

Password: _____   Submit

```python
import hashlib

f = open("/usr/share/dict/words")

for guess in f.readlines():
    digest = hashlib.sha1(guess).hexdigest()
    if digest == "2d1b30542e3bcc8467096e4407e1276d026e4f69":
        print "Found it!", guess
```

modularity

file I/O

loops

objects & methods

conditionals & types

What's this? N00bs playing with passwords?

Your realize your classwork is as public as a story on cable news.

Tell your professor to learn to protect you better than this.

SELECT * FROM db.users:
                              test,
                              znjp,
                              asd,

환영

Welcome to **Dark Park**! My name is Daniel Park. My mission is simple: to provide all of the Dark Web a safe port to communicate, lurk, exchange tips, hide or possibly share secrets as the case may be, receive news the rest of the Internet never sees, to be your one stop shop to everything you love about the Dark Web. And it is ALL FREE! So join me, set up a guaranteed secure account here, beyond the street lights in the shadows of Dark Park!

Log in to Post!

efficacy

"wouldn't be as fun without the game"

"hacking doesn't mean being amoral"

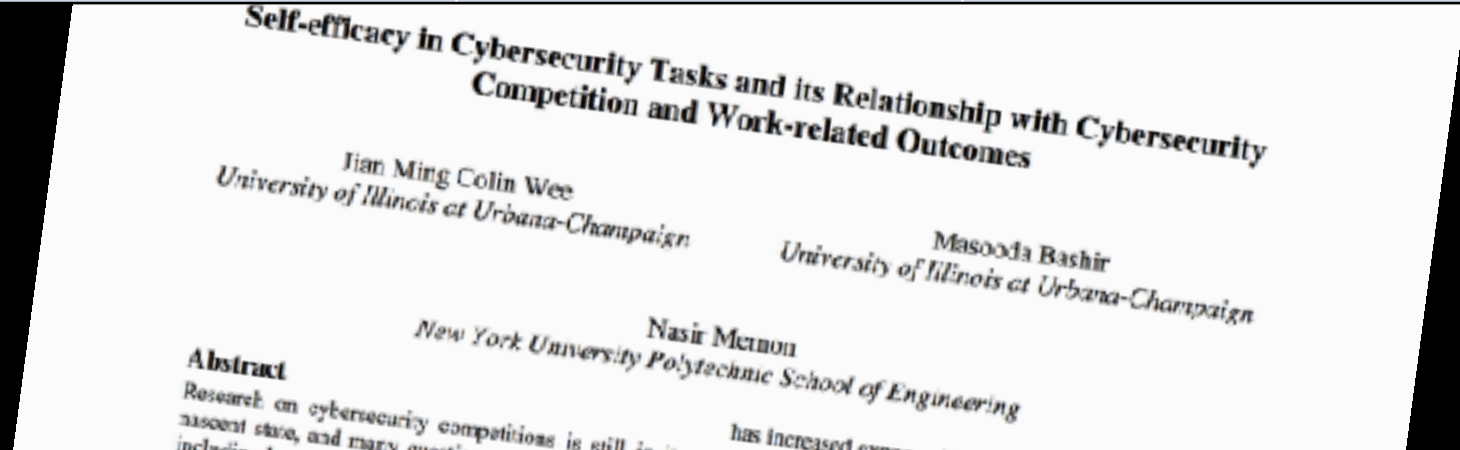"opens an entirely new world"

efficacy

"I want to stay in the major"

"I have a power that can lead to the greater good"

Variable	Pre-Course Survey (Likert Scale)	Post-Course Survey (Likert Scale)
Confidence in Learning	3.64	4.41

Self-efficacy in Cybersecurity Tasks and its Relationship with Cybersecurity Competition and Work-related Outcomes

Jian Ming Colin Wee
University of Illinois at Urbana-Champaign

Masooda Bashir
University of Illinois at Urbana-Champaign

Nasir Memon
New York University Polytechnic School of Engineering

Abstract

Research on cybersecurity competitions is still in its nascent state, and many questi... has increased expe... includi...

physical
security

caution &
curiosity

behaviors

thoughtful
apathy
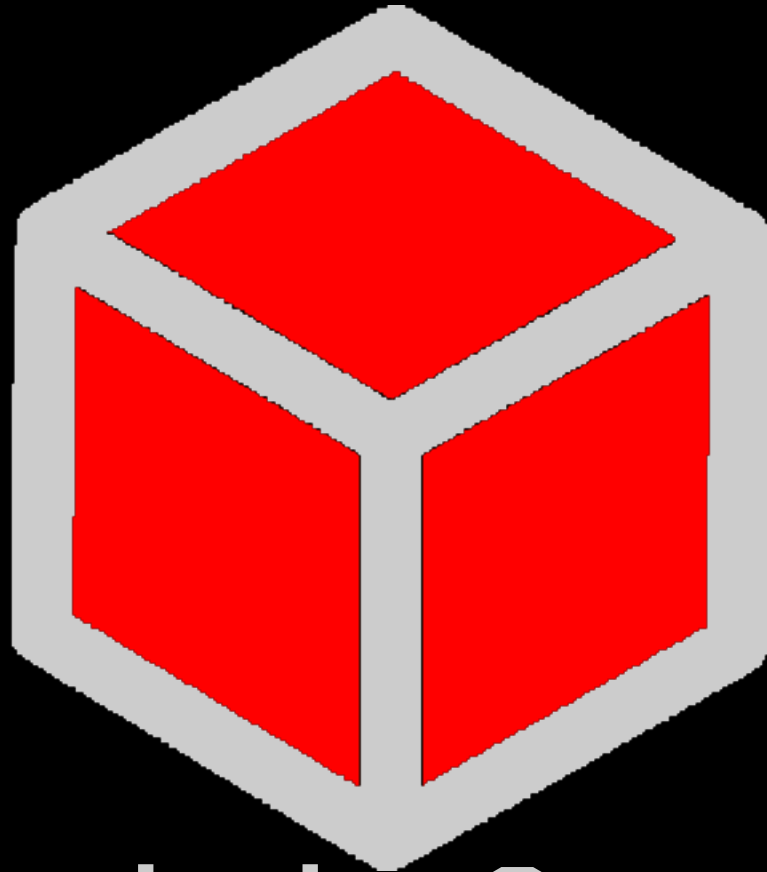
the shadowConcern

STANFORD
UNIVERSITY

the shadowConcern
http://192.168.0.1

shadowCasters
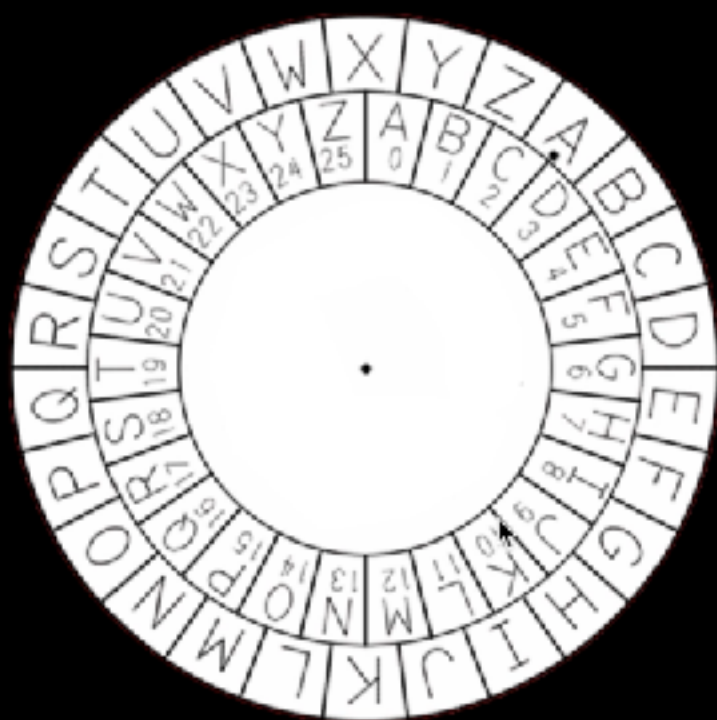

shadowCaster 13

Agent ID:

Password:

Login

OZYZEMPNZYNPCYPO

releaseLight()

terminology

student needs

challenges

educator needs

assessment

```
call   400556 <action(you*)>
```
(a call to action)

> ...thank you

@znjp

znjp.com

tabletopsecurity.com