

ISE@FHSU

Houssain Kettani, Ph.D.

Professor & Director

Computer Science & Information Systems Engineering



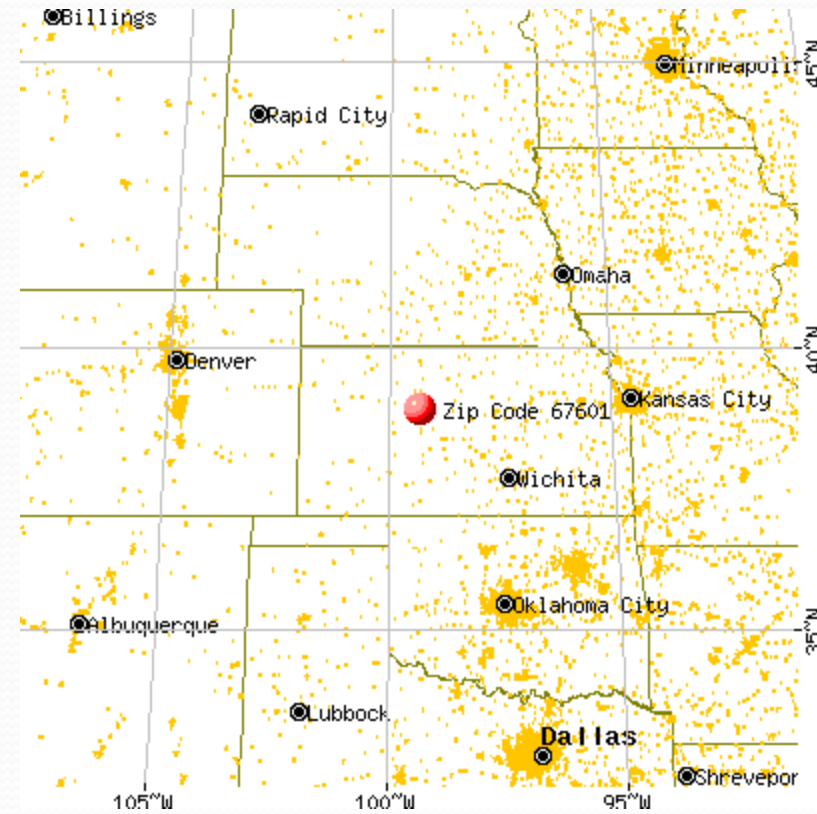
**FORT HAYS STATE
UNIVERSITY**

Forward thinking. World ready.

ISE

Information Systems Engineering

Hays, KS





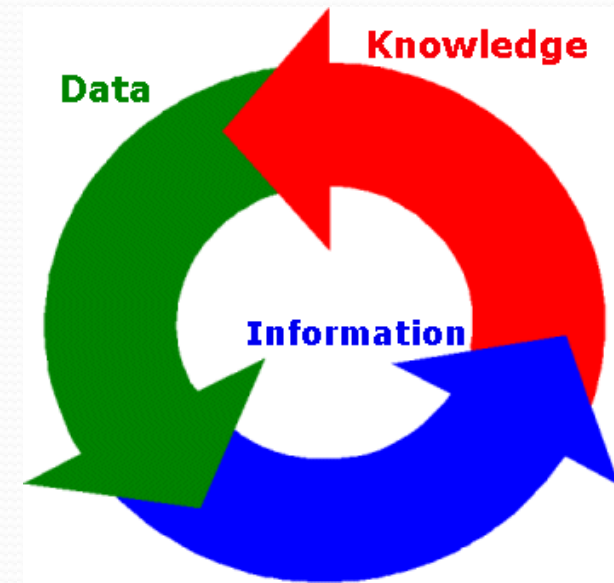




- Est. 1902
- 14,000+ students
- NSA/DHS CAE/IAE
- Attractive transfer deals and 2+2's
- <http://bigcat.fhsu.edu/~kettani/ise.html>
- <http://www.fhsu.edu/csise/>

Data vs. Information

- Data: recorded facts and figures
 - Collection
 - Storage
 - Management
 - Retrieval
 - Analysis
- Information: knowledge derived from data



Information Systems

- IS: Collection of hardware, software, data, people and procedures that work together to produce quality information.
- ISE: the effective use or engineering of IS for a better understanding of data to optimize decision making.

New Degree

- BS: FHSU, JCSU
- MS: JHU, Harrisburg U.,
- PhD: U. Michigan – Dearborn, TSU



Supercomputers



80

Supercomputers

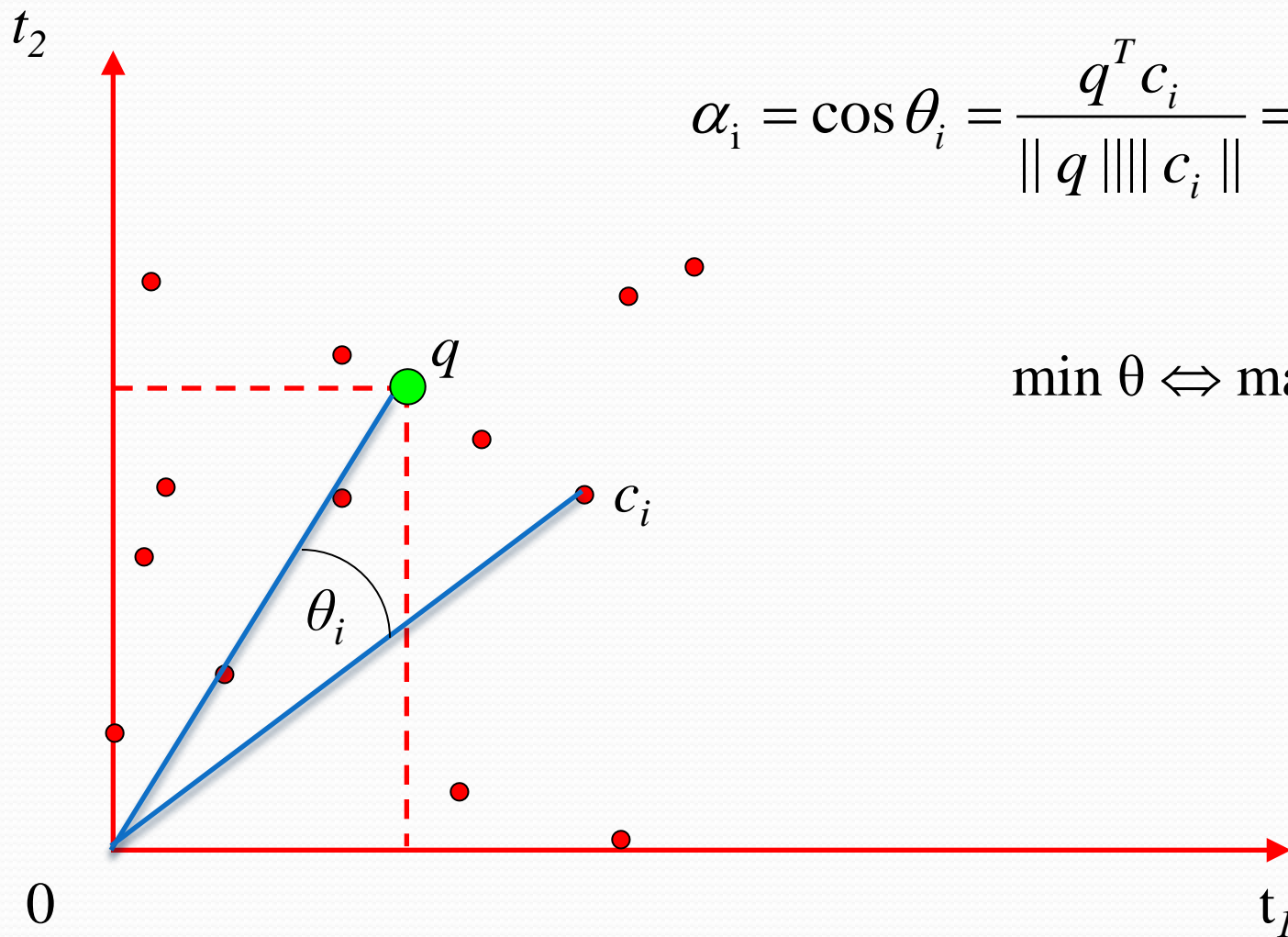
- Fastest: Tianhe in China (1), Titan at ORNL (2)
 - Performs 34 (18) Pflop/s
 - Petaflop/s or quadrillion (10^{15}) calculations per second
 - Has ~ 3 (1/2) million processors
- Exaflop computing (quintillion - 10^{18}) by 2018
 - Gf in 1985, Tf in 1996, Pf in 2008
- Power: 18 (8) MW
- <http://top500.org/>

SC vs. PC

- PC achieves about 10 Gigaflop/s (Gflop/s or 10^{10})
- Titan is 2,000,000 times faster!
- 1 sec in Titan = 2,000,000 sec in PC
 - or 565 hours
 - or 24 days
- 1 hr in Titan = 232 yrs in PC!
- <http://whohasthefastestcomputer.com/flopsmeter/>



Info Retrieval



$$\alpha_i = \cos \theta_i = \frac{q^T c_i}{\|q\| \|c_i\|} = q^T c_i$$

$$\min \theta \Leftrightarrow \max \alpha$$

ISE Curriculum 1/2

Fall 1 Courses

COMM100 Fundamentals of Oral Communication [FSU]	3
ENG101 English Composition I [FSU]	3
HHP200 Personal Wellness [FSU]	3
IDS001 The First Year Seminar [FS]	1
MIS101 Introduction to Computer Information Sys [FSU]	3
PHYS100 Introduction to Engineering Science [F]	3
Total	16

Fall 2 Courses

CSCI261 Computer Science I [F]	3
INT291 Internetworking I [FSU]	3
MATH235 Analytic Geometry & Calculus II [FS]	5
PHYS212 Physics for Scientists & Engineers II & Lab [FS]	5
Total	16

CH Spring 1 Courses

ENG102 English Composition II [FSU]	3
INT250 Introduction to Web Development [FS]	3
MATH234 Analytic Geometry & Calculus [FS]	5
PHYS211 Physics for Scientists & Engineers I & Lab [FS]	5
Total	16

CH Spring 2 Courses

ECFI205 Theory & Practice of Personal Finance [FSU] (or other SBS)	3
MATH236 Analytic Geometry & Calculus III [FS]	3
MATH240 Linear Algebra [S]	3
MATH250 Elements of Statistics [FSU]	3
PHIL100 General Logic [FSU] (or other Humanities)	3
Total	15

ISE Curriculum 2/2

Fall 3 Courses

CSCI466 Software Engineering I [F]	3
ISE300 Foundations of Info Systems Engineering [FSU]	3
ISE310 Random Signal Analysis [S]	3
MATH646 Discrete Structures [F]	3
PHYS332 Analog & Digital Electronics [F]	3
PSY100 General Psychology [FSU] (or other SBS)	3
Total	18

CH Spring 3 Courses

CSCI463 Data Structures & Algorithm Design [S]	3
HIST111 Modern World Civilization (or IS) [FSU]	3
ISE320 Information Management [S]	3
ISE330 Signals and Systems [S]	3
SOC140 Introduction to Sociology [FSU] (or other SBS)	3
Total	15

Summer 3: ISE400 Internship in Information Systems Engineering [S] 1

Fall 4 Courses

GSCI110 World Geography (or other IS) [FSU]	3
INT430 Leadership in INT [FU]	3
INT650 Interactive System Design [FSU]	3
INT684 Foundations of Information Systems Security [F]	3
ISE440 Communication Systems [F]	3
Total	15

CH Spring 4 Courses

CSCI663 Introduction to Cryptography [S]	3
COMM318 Intro to Organizational Communication [FSU] (or other Humanities)	3
IDS390 Technology in Society [FSU] (or other UDI)	3
ISE450 Information Theory [S]	3
ISE490 Capstone Seminar in Info Systems Eng. [FS]	3
PHIL340 Ethics [FSU] (or other Humanities)	3
Total	18

Opportunities

- Grad schools
- ODNI's federal intelligence agencies
- National Laboratories
- Private companies
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- *The choice is yours, we are here to help!*





