Hao Hu, Boston University,

Tel: (949)-870-0816
Email: haohu@bu.edu
http://people.bu.edu/haohu

Projects & Coursework

PROJECTS:

Network-aware Container Distribution System, Cloud Computing, Boston University, 2015

- **Linux, Python, Bash, OSI model, AMQP, MongoDB, JSON**
- **Work: Client and server network transmission control, Design & implement**

The goal of this project is to help a start-up company implement a solution to a real world problem by developing an adaptable container deployment system, capable of *monitoring the network* and *minimizing network congestion*.

Indie Music Connector, Software Engineering, Boston University, 2015

- **HTML, JavaScript, CSS, C#, SQL Server 2012**
- **Work: Full Stack Developer: Layout & Graphic, UI design, Database & Search Engine**

Our goal is use the software engineering based model, idea, standard procedures to implement a music website. we choose HTML, JavaScript, CSS for the front-end language, and Ruby on Rails to connect to the back-end database. Our website enable funs to connect to their favorite music bands, and implement music searching, comments share.

Android Faked ID Vulnerability, Cybersecurity, Boston University, 2014

- **Python, Java, Linux**
- **Work: Research in cryptography, vulnerability analyze**

A vulnerability in Android OS version 4.3 and earlier where the cryptography of self signed certificates is not checked by the operating system, allowing an attacker to modify the self signed certificate for a malicious program and convince the OS that its certificate was issued by a trusted certificate authority. The focus of this vulnerability is Public Key Infrastructure (PKI); specifically, public certificates and self-signed certificate chaining. Our goal is explore and demonstrate how the attack could be.

Indexing Methods for Temporal Databases, Advanced Database, Boston University, 2014

- **Java**
- **Work: implemented MVBT data importing, analyzed and experimented queries performance**

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Our project involved analyzing, implementing and comparing the performance of three different temporal indexing methods: Multiversion B-tree, Snapshot Index and log-structured history data access method. We implemented and experimented these methods on both single node and cluster based queries.

Nearest State/County Finder, Advanced data structure, Boston University, 2014

- **Java**
- **Work: Group Leader, implemented data structure for space query**

In this project, we choose R-tree as the data structure to import and store geographical points. We make use of Minimum Bounding Rectangle (MBR) to determine which State/County the point geographically belongs to, or return a integer to present how many miles it away from. We build a GUI with United States Map to capture user's click action, and transform the click point to formatted data (latitude and longitude). As a result, this input will return an object of State/Count, or a distance to nearest object.

Social Network Database Design, University of California, Irvine, 2013

- **Delphi**
- **Work: Group Leader, assign tasks, database design, constraint check**

We designed a Social-Network database that based on twitter-like and facebook-like users ER structure. The main target is implement such a database in standard procedure: Requirements and relationship analyze -> Entity - Relationship Diagram -> Transfer to set of relations -> Create tables and define keys -> Constraint check and trigger design -> Testing and query

Research in Content-centric Networking, University of California, Irvine, 2013

- **Work: Group Leader, assign tasks and protocols analyze**

Content-centric Networking(CCN) is a new Internet architecture aiming to solve the problem of current networking technology, network use has evolved to be dominated by content distribution and retrieval, while networking technology still speaks only of connections between hosts. This project focus on the architecture of the network and the protocols used in CCN.

Initial Diagnosis System,   Hubei University Chinese Medicine, 2012

- **Delphi8**
- **Work: group Leader, database implement, database interface design**

This project focus on the analyze of the combination information from medical records,

medical examination data, and patient's symptoms. We construct a "Characteristic Symptoms Database" to query main parameters and symptoms, thus result initial diagnosis.

Patient Registration System,   Hubei University Chinese Medicine, 2010

- **Delphi**
- **Work: group Leader, UI Design, database interface design**

This project focus on the interfaces between the graphic operation window and the database, the relationship between tables , and the design of the database.

COURSERS:

Coursera Online Courses:

The Advanced Object-Oriented Technology	02/24/2014-05/28/2014	Peking University
Internet History, Technology, and Security	02/03/2014-04/29/2014	University of Michigan
An Introduction to Interactive Programming in Python	03/24/2014-06/03/2014	Rice University
Big Data and Information Dissemination	04/01/2014-06/30/2014	Fudan University
R Programming	07/19/2014-08/19/2014	Johns Hopkins University
Usable Security	01/19/2015-02/27/2015	University of Maryland

Core Courses, Boston University

Advanced Data Structure	9/2014-12/2014	Java
Advanced Discrete Mathematic	9/2014-12/2014	
Cybersecurity	9/2014-12/2014	C/ C++/ Shell / Linux / SQL
Advanced Databases	9/2014-12/2014	Python / java / Delphi
Information-Theoretical Design of Algorithms	1/2015-5/2015	

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Software Engineering	1/2015-5/2015	
Cloud Computing	1/2015-5/2015	Docker / Distribute System / Linux / Bash
Enterprise Client-Server Software Systems Design	1/2015-5/2015	HTML/C#/JavaScript

Core Courses, University of California, Irvine

Intro Programming	1/2013 - 3/2013	Python
Intro to Data Management	4/2013 - 6/2013	SQL
Computer Networks	4/2013 - 6/2013	

Core Courses, Hubei University of Chinese Medicine

Foundations of Computer Science	9/2008 - 1/2009	
Structural Program Designing	3/2009 - 7/2009	C++
Data Structure	9/2009 - 1/2010	C++
Object-oriented Programming	3/2010 - 7/2010	Delphi
The JAVA Language Programming	9/2010 - 1/2011	Java
Operating System	9/2010 - 1/2011	
Multi-media Technology	9/2010 - 1/2011	
Principles of Computer Composition	9/2010 - 1/2011	
Database Principles	9/2010 - 1/2011	SQL
Computer Networks	3/2011 - 7/2011	
Software Engineering	3/2011 - 7/2011	
Algorithm Design	3/2011 - 7/2011	C++
Network Database	3/2011 - 7/2011	SQL
Website Building	3/2011 - 7/2011	HTML / CSS
Software Modeling	9/2011 - 1/2012	UML

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Software Testing	9/2011 - 1/2012	
XML	9/2011 - 1/2012	XML

Medical Courses, Hubei University of Chinese Medicine

Essential of Modern Basic Medicine	9/2009 - 1/2010
Modern Clinical Medicine	3/2010 - 7/2010
Introduce to Medical Information	9/2010 - 1/2011
Hospital Information System	3/2011 - 7/2011
Telemedicine System	9/2011 - 1/ 2012