

# Derrick Cheng

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<http://www.derrickcheng.com/demo>

10+ years strong programming experience with 4 years in developing commercial applications. Broad hand-on experiences including health management information system, robotics, and bioinformatics.

## Technical Skills

- **Programming:** C++, C#, ASP.NET, VB, PHP, Java, JavaScript, AJAX(jQuery), XML, XSL, HTML, XHTML, CSS, Bash Shell, Ruby, Ruby on Rails, HL7.
- **Database:** SQL, Caché(MUMPS), Tokyo Cabinet.
- **Statistics:** R, Matlab, Minitab, Design Expert.
- **Operating Systems:** Windows, FreeBSD(UNIX), Fedora, Ubuntu, OS X.
- **Service Applications:** Apache, Memcached, MySQL.
- **Other Skills:** Web Applications/Service, Computer Security, Computer Vision, Database Optimization and Tuning, Human Computer Interactions, Social Networking, Source Control.
- Please visit <http://derrickcheng.com/demo> for skills demonstrations.

## Professional Experience

### Epic Systems Corporation, Madison, WI

03/2007 - 04/2009

Software Developer

Developed an enterprise level information system for health care organizations to manage hospital billing, coding, claim, and reimbursement data. Improved the overall users workflow by saving time, money, and providing accurate results to make better decisions.

- Worked on full life cycle of new product developments and maintain existing products.
- Designed and developed application modules on complex information system architecture that can record, classify, summarize and report of medical billing transactions. The applications help preparing the billing performance reports, showing the current billing status and assisting in decision-making processes of medical billing users.
- Designed and developed simple but sophisticated Windows-based applications that can optimize users workflow, communications, and data analysis. This systematic, cost-effective, and user friendly applications help improving the customers' overall work performances and increasing their revenues in 3 months.
- Improved the application performance(response time and server access) by 20%.
- Implemented HL7 based interfaces for data exchange with 3<sup>rd</sup> party products.
- Reviewed the codes written by other developers to ensure the quality and consistency.
- Designed test plan and provide technical documentation for end-user level quality assurance.
- Customized the applications for customers to meet their workflow and requirements.

### The Biosignals Intelligence Group

01/2006 - 02/2007

Department of Computer Science, University of Illinois at Urbana-Champaign

Research Engineer

Developed a smart security system with self-aiming camera that tracked objects based on their motions, temperatures, body shapes, face patterns, and time of events using machine learning algorithms.

- Developed a web application that allowed end-users to control the system and the database remotely.
- Developed image processing and database applications to process and analyze the images.
- Implemented hardware interface for controlling video components and motors.
- Several US military contractors showed interests on licensing this technology.

### Functional Genomic Laboratory

01/2005-12/2005

Department of Molecular and Integrative Physiology, University of Illinois at Urbana-Champaign  
Research Assistant

- Developed techniques for clustering genes expression microarray data, including experiments with different algorithms, map topologies, and distance metrics.
- Measured the replicability of clustering results using Rand Index, Consensus Share, and Agreement Share. Result showed that the method we developed was the best clustering algorithms for bioinformatics data in terms of replicability.
- Investigated tools and techniques for motif discovery and sequence alignment.
- Master thesis was based on this research result.

## **Other Experience**

### **Knowledges Sharing**

**2008-present**

- Created and developed a website to share knowledges in computer technologies including Ruby On Rails, FreeBSD and database applications.

### **Success Formula at Illinois**

**2004-2005**

- Co-founded and developed a Wiki based website that allowed users from local community to share their knowledges.
- User could create, edit, and comment the contents to improve the quality of the submitted knowledges.

### **Satellite Communication Systems**

**2003-2004**

- Designed and developed a communication systems for nano-satellite(10cm x 10cm x 20cm).
- Developed an application that processed the data received from satellite and allowed the user to control the satellite from the earth.

### **Server Administration/Web Hosting**

**2003-present**

- Build and maintain a Unix-based server group that provide the following service:  
Web hosting, knowledge sharing, data synchronization, proxy services and web services.

## **Education**

### **Master of Science in Systems Engineering, 2006**

**GPA: 3.6/4.0**

University of Illinois at Urbana-Champaign, Illinois

- **Research Area:** Machine Learning(Data Clustering and Genetic Algorithms), Bioinformatics
- **Master Thesis:** Agreement Share: An Alternative Way to Measure Cluster Performance

### **Bachelor of Science in Electrical Engineering, 2004**

**GPA: 3.3/4.0**

University of Illinois at Urbana-Champaign, Illinois

### **Certifications from BrainBench.com**

- C#, ASP.NET, Java, Microsoft Security
- As of May 2009, my test score of C# is ranked the #1 in Wisconsin and 97% percentile in US.

**References available upon request.**

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