

# Zhenjiang Li

Computer Engineering

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## CAREER OBJECTIVE

Research and development position in network industry

## EDUCATION

**University of California, Santa Cruz 2001 ~2006**

*Ph.D. in Computer Engineering*

*Thesis: Multi-constrained Path Computation for QoS Routing In Computer Networks*

*Advisor: Prof. J.J. Garcia-Luna-Aceves*

**University of Science & Technology of China (USTC) 1993 ~ 2001**

*B.S. and M.S. in Electrical Engineering (1998 and 2001, respectively)*

## SKILLS

Proficient in C/C++

Proficient in shell (Csh and Bash) and Perl scripting

In-depth knowledge of TCP/IP

Good working knowledge of network programming with standard socket APIs

Good working experiences with RedHat Linux, FreeBSD and Solaris

Years experiences of UNIX system administration, kernel configuration and recompilation

Good working knowledge of Matlab in simulating and plotting

Proficient in discrete event simulators NS-2 and Qualnet

Familiar with wireless standards, protocols, and IEEE802.11 issues

## EXPERIENCE

**Computer Engineering, Univ. of California, Santa Cruz 2002 ~ present**

*Graduate Student Researcher*

Develop efficient algorithms for constrained path selection based on depth-first search, distributed protocols for QoS provisioning in IP networks using distance-vector routing, and on-demand constrained path searching schemes for wireless ad hoc networks; propose new non-interactive key establishment protocols for mobile ad-hoc networks (MANETs) using self-certified key cryptosystem, and its application to securing on-demand ad hoc routing; study efficient broadcasting algorithms for wireless networks using "hello-less dominant pruning"; and propose a complementary approach to verifying the correctness of secure routing protocols using BAN logic and proving tool SPIN

**Computer Engineering, Univ. of California, Santa Cruz 2001~2003**

*Teaching Assistant*

Grad class "Multimedia Systems" - fall 2001

Undergrad class "Introduction to Networking and the Internet" - spring 2002

Undergrad class "Introduction to Computer Networks" - Fall 2003

**Far-East Technologies, Co. Ltd., China 08/2000 ~ 05/2001**

*Software Engineer*

Implement new encryption modules for OpenSSH, coding in C/C++

Design a monitoring GUI for OpenSSH, using MS Visual Studio 6.0 and MySQL

**Infosec Technologies Co, Ltd., China** (<http://www.infosec.com.cn>) 06/1999 ~ 06/2000  
*Technical Support Engineer*

Install and maintain firewall (Checkpoint Firewall-1) and intrusion detection systems  
Scan and diagnose network security vulnerabilities

**State Laboratory of Information Security, Chinese Academy of Sciences, China**  
(<http://www.is.ac.cn>) 1998~2001

*Graduate Student Researcher*

Design and implement "Distributed Network Intrusion Detection System (DIDS)"  
Design and implement "Virtual Private Network (VPN) System"

### **SELECTED COURSE PROJECTS**

Implement bilateral filter, an image blur plug-in for PhotoShop 6.0

Location tracking of mobile nodes via triangulation scheme in wireless networks

Simulation study of the linear equalization (LE) and decision feedback equalization (DFE), under Zero-Forcing (ZF) and Minimum Mean-Square Error (MMSE) criteria, respectively

Simulation study of the Resource Reservation Protocol (RSVP) and its effects on multimedia flows

Simulation study of the capacity of wireless ad-hoc networks

Implement and compare the performance of variants of quicksort and heapsort Algorithms

### **PUBLICATIONS**

#### **Book Chapter**

**Z. Li** and J.J. Garcia-Luna-Aceves, "Non-Interactive Key Distribution Protocols and Their Applications to Security in Wireless Mesh Networks", Security in Wireless Mesh Networks (Y. Zhang, J. Zheng and H. Hu, Eds.). To be published by Auerbach Publications, CRC Press, 2007.

#### **Journals**

**Z. Li** and J.J. Garcia-Luna-Aceves, "Loop-Free Constrained Path Computation for Hop-By-Hop QoS Routing", Computer Networks (Elsevier) Journal, 2007

**Z. Li** and J.J. Garcia-Luna-Aceves, "Using Non-Interactive Key Agreement and Progression Protocols to Enhance the Security of Ad Hoc Networks", Ad Hoc Networks (Elsevier) Journal, 2006.

**Z. Li** and J.J. Garcia-Luna-Aceves, "Finding Multi-Constrained Feasible Paths By Using Depth-First Search", Wireless Networks Journal (ACM/WINET, Springer), 2006

#### **Conferences**

**Z. Li** and J.J. Garcia-Luna-Aceves, "A Distributed Approach for Multi-Constrained Path Selection and Routing Optimization", QShine'06, Aug. 7-9 2006, Waterloo, Ontario, Canada.

**Z. Li** and J.J. Garcia-Luna-Aceves, "New Non-Interactive Key Agreement and Progression (NIKAP) Protocols and Their Applications to Security in Ad Hoc Networks", WSNS'05, Nov. 7-10, Washington DC, USA

**Z. Li** and J.J. Garcia-Luna-Aceves, "Enhancing The Security Of On-demand Routing in Ad Hoc Networks", AdhocNow'05, LNCS 3738, pp. 164-177, Oct. 6 - 8 , 2005, Cancun, Mexico.

**Z. Li** and J.J. Garcia-Luna-Aceves, "Solving Multi-Constrained Path Selection Problem by Using Depth First Search", QShine'05, Aug. 22 - 24, 2005, Orlando Florida, USA.

**Z. Li** and J.J. Garcia-Luna-Aceves, "A Secure Reactive Ad Hoc Routing Protocol", LANOMS'03, Sept. 4-6, 2003, Iguassu Falls, Brazil

#### **AWARD**

Regents Fellowship, University of California 2001

### **REFERENCE**

**Prof. J.J. Garcia-Luna-Aceves**, Email: [jj@soe.ucsc.edu](mailto:jj@soe.ucsc.edu), (831)459-4153, UC Santa Cruz