Piyush Harsh

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OBJECTIVE To obtain Full-Time R&D position with a reputed computer science core company or research lab/university starting anytime beginning January 2012.

EDUCATION

PhD, Computer Engineering Summer 2010
GPA: 3.81/4.00 University of Florida, Gainesville, FL

Bachelor of Technology in Computer Science and Technology Spring 2003
GPA: 8.56/10.00 Indian Institute of Technology (IIT), Roorkee, India.

DISSERTATION TOPIC **A Distributed Approach to Multicast Session Discovery** - "*mDNS: A Globally Scalable Multicast Session Directory Architecture*".

RESEARCH INTERESTS Computer & Network Security, Protocol Development, Distributed Systems, IP Networks, TCP/IP, Multicast, Cognitive Networks, Cloud Computing, and Bio-inspired computing.

PROFESSIONAL SERVICES

- Journal Reviewer – The Journal of Supercomputing (Published by Springer)
  Journal Editor: Hamid R. Arabnia
- ACM Professional Member (Member Number: 8935559)
- Journal Reviewer – ETRI Journal, South Korea.

PUBLICATIONS

1. Lokesh Bhoobalan and Piyush Harsh – "**An Experimental Study and Analysis of Crowds Based Anonymity**", accepted at ICOMP'11 to be held in Las Vegas in July 2011.
2. Piyush Harsh and Richard Newman - "**Recovering from mDNS domain failures**", proceedings of ICOMP'10 held in Las Vegas in July 2010.
3. Piyush Harsh, Randy Chow and Richard Newman – "**Gray Networking**: a step towards next generation computer networks", proceedings of ACM SAC 2010, March 21-26 2010.
4. Piyush Harsh and Richard Newman – "**Mode Independent Session Directory Service Architecture -** a unified approach for ASM and SSM multicast networks", proceedings of ACM SAC 2010.
5. Piyush Harsh and Richard Newman – "Efficient Distributed Search for Multicast Session Keywords", proceedings of ICOMP'09, July 13-16, 2009, held at Las Vegas, USA.
6. Piyush Harsh and Richard Newman – "**Using Geo-Spatial session tagging for smart multicast session discovery**", proceedings of ACM SAC 2009, March 8-12, 2009.
7. Piyush Harsh and Richard Newman – "**mDNS - A Proposal for Hierarchical Multicast Session Directory Architecture**", proceedings of ICOMP'08, July 14-17, 2008.
8. Piyush Harsh and Richard Newman – "**An overlay solution to IP-Multicast address collision prevention**", proceeding of IASTED EuroIMSA 2008, March 2008.
9. Piyush Harsh and Richard Newman – "**Usability and Acceptance of UF-IBA, an Image-Based Authentication System**", proceedings of IEEE ICCST 2007, October 2007.
10. Richard E. Newman, Piyush Harsh and Prashant Jayaraman – "**Security Analysis of and Proposal for Image-based authentication**", proceedings of IEEE ICCST 2005, October 2005
11. Piyush Harsh – "**Design and analysis of covert channels through timed mix firewalls**" – CONS Internal Report, July 2005
12. mDNS IETF RFC Draft: ID 19409 (Expired May 20 2010), can be accessed at https://datatracker.ietf.org/doc/draft-mdns-rfc-informational/

WORK EXPERIENCE

R&D Engineer January 2011 – present
INRIA Bretagne-Atlantique Research Center Rennes, France

- Design architecture for federation of clouds
- Implement distributed resource manager for virtual execution platforms
- Preparation of deliverables for European Commission
- Incorporation of open cloud standards such as OVF, OCCI in Contrail implementation
- Evaluation of cloud platforms including OpenNebula, Eucalyptus, OpenStack for possible reuse

IT Expert September 2010 – January 2011
CTRIP, UF & Shands IT Gainesville, Florida

- Development of automated tools for data extraction from NIH national clinical trials database.
- Clinical trials web based search tool development
- Clinical studies portal development using CakePHP
- Migration of old databases and stored procedures from MSSQL to MySQL

mDNS – DNS Aware Multicast Sessions Directory Service August 2007 – August 2010
CISE, University of Florida Gainesville, FL

- Designed the scalable and distributed architecture
- Co-Authored several research conference papers that has been presented in leading network conferences in USA and Europe.
- Implemented a proof of concept architecture using Java and Google Maps API.
- Incorporated geo-coding and hash based keyword space distribution
- Co-authored the IETF RFC for the service, currently under review by IETF board.

Gray Networking June 2009 – August 2010
CISE, University of Florida Gainesville, FL

Covert Channels through Timed Mix Firewalls August 2004 – August 2005
Navy Research Lab and the University of Florida Gainesville, FL

- Designed the covert channel module
- Implemented the real time covert channel in Java
- Setup and demonstration of the working system on a network of Linux systems
- Coordinated the implementation and integration of various modules within a team of 4 students.

Image Based User Authentication August 2005 – August 2007
University of Florida Gainesville, FL

- Co-Authored the concept paper which was accepted in IEEE Carnahan Conference on Security Technologies, Las Palmas Spain October 2005
- Implemented the working system using PHP, CSS and HTML
- Incorporated University of Florida guidelines on secure online dissemination of student grades
- Designed the automated log preprocessor and aggregator using Java and PHP

CONS Co-System Administrator August 2005 – January 2011
CISE, University of Florida Gainesville, FL

- Mange a network of around 10 systems consisting of Win XP, Win 2K, Suse and Fedora
- Maintaining CONS wiki, DNS bind server.
- Managing proper network and file access restrictions using Sudo and IPTables

RELEVANT COURSE PROJECTS

- Design and Implementation of a preferential-service capable router including implementation of line classifiers and leaky-bucket based host management systems (simulation) + analysis of service rates for different QoS class data packets – CEN6505 Advance Computer Networks
- P2P Client and Server Application – CEN5501C Computer Networks
- Java based implementation of man in the middle attack vulnerability assessment for 3DES in CBC, ECB and OFB modes and Diffie-Hellman key exchange using J2CE packages.- CEN5540 Computer and network Security
- Java based distributed election algorithm implementation for leader selection based on Sollins minimum spanning tree algorithm – COP5615 Distributed Systems

TA EXPERIENCE

TA - Support	Computer Networks	CEN5501C	Spring 07 and Summer 07
TA - Teaching	Discreet Structures	COT3100	Fall 04, Spring 05 and Summer 07
TA - Support	Distributed Systems	COP5615	Fall 06, 07, 09, Spring 08, Sum 08
TA - Support	Computer Network Security	CEN5540	Fall 05, Spring 06 and Fall 08
TA - Teaching	Computer Organization	CDA3101	Summer 04
TA - Support	Problem Solving using Software	CGS2531	Fall 03 and Spring 04

RELEVANT GRADUATE COURSES	Computer and Network Security	Distributed Operating Systems	Advance Computer Networks
	Cryptographic Protocols	Physical Limits of Computing	Computer Architecture
	Topics in Communication N/W	Formal Languages	Analysis of Algorithms
	Computer Networks	Advance Data Structures	Math Methods for Intl. Systems
	Programming Languages	Software Testing & Verification	
RELEVANT UNDER - GRADUATE COURSES	Data Structures	Signals and Systems	Fuzzy Sets and Fuzzy Systems
	System Software	Mobile Computing	Microprocessors
	Discreet mathematics	Compiler Design	Computer Networks
	Electronic Devices & Circuits	Database Management Systems	Telecommunication Networks

COMPUTER EXPERIENCE	PHP	Java	TCP	UDP	Linux { Ubuntu, SUSE, Fedora, Mandriva }
	HTML	CSS	LDAP	JavaScript	Windows {XP, Vista, 2000, 98}
	C/C++	MySQL	IPv4	IPv6	Virtualization {VMware, Virtual PC}

AWARDS & SCHOLARSHIP	University of Florida Teaching Assistantship	August 2003 – Present
	University of Florida Research Assistantship	Summer 2005, 2006, 2007, 2008.
	University of Florida Full Tuition Waiver	August 2003 – Present
	Indian Institute of Technology Merit Scholarship	August 1999 – December 2002
	Delhi Public School Merit Scholar	1997 – 1999

REFERENCES

Dr. Richard Newman (http://www.cise.ufl.edu/~nemo/)
Dr. Y. C. Chow (http://www.cise.ufl.edu/~chow/)
Dr. Ye Xia (http://www.cise.ufl.edu/~yx1/)
More available upon request