San Tan

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OBJECTIVE

To obtain a software engineer position.

HIGHLIGHTS OF QUALIFICATIONS

Years of experience in designing and implementing different software products;
Good knowledge of algorithm, computer network and operating system (Linux);
Strong passion in coding.

TECHNICAL PROFILE

Programming Languages: C/C++ (Boost/STL), Perl, Bash Scripting, XML schema, XPATH, XSLT
Functional Skills : Algorithm, Data Structure, Object Oriented Design
Computer Networks : TCP/IP (Ethernet), HTTP, Wireless Network, 802.11 / WiFi.
Operating System : Linux (Process/Multi-thread/Synchronization/File System/Socket/Package)

WORKING EXPERIENCE

MTS, VMware, Palo Alto, CA, 10/2008 to present

- Worked in VMware Studio team; VMware Studio is a tool to automate the creation/update of Virtual Appliance (virtual machines + OS + application software + user configurations);
- Implemented a feature which updates existing appliance as user requests (mainly using Perl, Bash Shell script and Python). It receives positive feedback and becomes the main feature of next two releases;
- Implemented CIM providers for Linux package update service and package creation service (mainly using c++ in Linux);
- Organized the existing system using object oriented design, which makes Studio more extensible and more maintainable;
- Wrote unit tests and solved different bugs.

Intern, Reva Systems, Chelmsford, MA, 05/2007 to 08/2007

- Designed an algorithm to detect moving RFID tags, which achieves a correctness of 99%.;
- Implemented an event-replay tool which reads log files then constructs messages and feed them to Reva's System (using c++ in Linux). Reva standardized this as a test tool for code check-in.

Senior Software Engineer, ZTE Corp., Shenzhen, China, 07/2002 to 09/2005

- Worked in CDMA Protocol team, which is responsible for implementing L2/L3 of CDMA protocol;
- Developed a module for call establishment and handoff (30,000+ lines of c code). It does: interact with five peer modules, use hash table to find existing users, use linked lists to manage dynamic allocation and release of index resources, maintain eight different states/sub-states according to CDMA protocol, and handle all exceptions. This module runs stably in commercial environment;
- Designed a processor selection algorithm for our multi-processor system and applied a patent in

2004;
- Implemented state synchronization between active system and backup system. By this design, active processor can switch to backup system without interrupting service.

EDUCATION

Master of Science in Computer Science, 2008
From Northeastern University, Boston, MA

Master of Science in Electrical Engineering, 2002
From Huazhong University of Science & Technology, Wuhan, China

Bachelor of Science in Electrical Engineering from Honor Program, 1999
From Huazhong University of Science & Technology, Wuhan, China

SELECTED SCHOOL PROJECTS

SPREAD project

- Proposed a new way, called "protocol/mechanism jumping", to increase the robustness of wireless network against jamming attack, and simulated its performance based on 802.11.
- This work led to a paper in 2007.

Covert Channel Analysis in GSM System

- Proposed a new way for two synchronized nodes to communicate by using GSM system without being detected: in one time slot the sender sends single information bit by accessing GSM system zero/one time, and the receiver reads the bit by observing response broadcasted by GSM system;
- Analyzed the channel capacity of this covert channel, based on the number of GSM users.

PUBLICATIONS AND PATENT

Paper: SPREAD: Foiling Smart Jammers using Multi-layer Agility, in proceedings of IEEE Infocom 07, mini-symposium.

Patent: A CPU Selection Algorithm for Call Processing System With Multi-CPU, China Application Number: 200410026833.1, Issue Date: 13/04/2004.

Paper: A BP Algorithm with Self-adapting Slope Output Function, Journal of Huazhong Univ. of Science and Technology, Nov. 2001.

Paper: Two-value Segmentation of Complex Color Image and Preliminary Dealing, Journal of Huazhong Univ. of Science and Technology, Nov. 2001.