MONTHER ALDWAIRI

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OBJECTIVE

A full-time research or design position in network processing and security, beginning May 06

EDUCATION

2000–present NC State University

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- Raleigh, NC
- Ph.D. Computer Engineering, May. 2006, GPA 3.9
- MS Computer Engineering, Dec. 2002, GPA 3.6

1993–1998 Jordan University of Science and Tech. Irbid, Jordan

BS in Electrical Engineering, 1998, GPA 86%

EXPERIENCE

2001–Present NC State University

Raleigh, NC

Research Assistant

Advisor: Dr. Paul Franzon

- Research involves new architectures and hardware for network security, with the focus on **intrusion detection and prevention** (signature-based, deep stateful and anomaly IDS).
- Devised a new hardware efficient pattern matching algorithm to increase the throughput of intrusion detection systems. The algorithm employs novel memory techniques for compressed storage and fast retrieval.
- Designed and tested a network processor for optical burst switching networks that support Just-in-Time signaling protocol.

Summer 2001 TogetherSoft

Raleigh, NC

System Administrator (Intern)

- System administration Linux/Windows
- Applications integration and testing (TogetherSoft Control Center).

1998-2000 ARAMEX International Amman, Jordan

Technology Integration Team member

- System administration: MS Windows and Back Office servers
- Network (LAN/WAN) installation and setup
- Intranet development and software deployment (ASP/IIS).

PUBLICATIONS

- "Hardware efficient pattern matching algorithm for intrusion detection". Monther Aldwairi, Thomas Conte, Paul Franzon. Being submitted to IEEE Transaction on Dependable and Secure Computing.
- "Configurable string matching hardware for speeding up intrusion detection". Monther Aldwairi, T. Conte, P. Franzon. In ACM SIGARCH Computer Architecture News, special issue: Workshop on architectural support for security and anti-virus (WASSA). Vol. 33, Issue 1, Mar 05. Pages: 99 - 107.
- "Switch Architecture for Optical Burst Switching Networks". Monther Aldwairi, M. Guled, M. Cassada, M. Pratt, D. Stevenson, P. Franzon. In the proceedings for the first workshop on Optical Burst Switching, Dallas, TX, Oct 03.

PROJECTS

- Design and implementation of a 10Gbps pattern matching accelerator for Intrusion Detection.
- **ASIC design for a network processor** for optical burst switching networks that support Just in Time signaling protocol (JIT), successfully deployed in ATDnet, Washington DC in Oct. 2002.
- ASIC design for an AES encryption/decryption engine.
- VLSI design for a 3.3V 8-bit-slice microprocessor (AM 2901)
- Cache system, branch predictor and instruction scheduler simulators
- MC68k simulator, 2-pass assembler, loader and a macro processor
- Wavelength routed network simulation
- Online trading agent design (TAC competition)
- Online procurement system (ASP, IIS5, MS Visual Interdev)

COURSEWORK

| Digital ASIC Design | Network Security |
|--------------------------|------------------------------|
| VLSI Design | Parallel Processing |
| ASIC Verification | Internet Protocols |
| Design for Testability | Network Measurements |
| Electronic Packaging and | High Speed Networks |
| Interconnect Design | O-O Languages |
| Computer Architecture | Technology Commercialization |
| Embedded System Design | E-Commerce Technology |
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COMPUTER SKILLS

- Operating Systems: Windows, UNIX and Linux
- Languages: Verilog, VHDL, C/C++, Java, SQL, Assembly and ASP
- Packages: Cadence (Composer, Virtuoso, Spectre), Synopsys, Modelsim, Quartus, Hspice, Matlab, MS Office, Visual Studio, Visio, CVS, HP Blue-stone, Tomcat, , TogetherSoft Control Center, AVR Studio

VISA STATUS

- F-1 student VISA
- Authorized to work in US

REFERENCES

- Dr. Paul Franzon paulf@ncsu.edu, (919) 515 7351
- Dr. Thomas Conte <u>conte@ncsu.edu</u>, (919) 515 5076

INTERESTS

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