

## Aladdin M. Sleem

Associate Professor

Department of Computer Science

Texas Southern University

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## Education

- **Ph.D. in Computer Science and Engineering**, University of Louisville, KY, 2003  
Dissertation: Handoff Management in Wireless Data Networks using Topography-Aware Mobility Prediction.
- **MS in Computer Engineering & Computer Science**, University of Louisville, KY, 2000
- **MBA in Information Technology Management**, Maastricht School of Management, Maastricht, The Netherlands, 1996  
Thesis: Electronic cash and secure electronic payments infrastructure for Internet business transactions.
- **Graduate Diploma in Computer Science**, Cairo University, Cairo, Egypt, 1990
- **BS in Systems & Biomedical Engineering**, Cairo University, Cairo, Egypt, 1985

## Employment

*Texas Southern University– Houston, TX*

*Sept 2006- Present*

### *Associate Professor, Computer Science Dept., College of Science and Technology*

#### ❖ Teaching and Student Learning

- Coordinated the development and launch of a new undergraduate concentration that allows Computer Science major students to earn a Bachelor of Science in Computer Science with Computer Networks Concentration.
- Established, in collaboration with Cisco Systems, the TSU Local Cisco Networking Academy in 2007. Through this academy, TSU students have exposure to Cisco Networking Academy Program which is a global education program that provides online courses, interactive tools, and hands-on learning activities to help them design, build, troubleshoot, and secure computer networks.
- Developed several new courses that were added to the Department course inventory such as:
  - **CS-250 Computer Networks Fundamentals**: Introduction to the fundamental networking concepts and technologies focusing on both the conceptual and practical skills needed to understand basic networking. Students will gain an understanding of the "layered" approach to networks and examine the OSI and TCP/IP layers in detail to understand their functions and services.

- **CS-251 Internetworking and Routing Basics:** A comprehensive study of internetworking as well as routing concepts and protocols to develop an understanding of how networks are linked together. This course covers the foundations of static and dynamic routing protocols. It provides a detailed study of various Distance Vector as well as Link State protocols and examines their characteristics, operations, limitations, configuration, and troubleshooting techniques.
- **CS-350 Local Area Network Fundamentals:** Introduction to LAN switching and wireless LANs. This course covers in great depth the underlying concepts and processes of the common Layer 2 switching protocols and technologies. It provides the necessary knowledge required to implement, verify, and troubleshoot Local Area Networks. It also covers wireless LAN standards and concepts required to design, implement and troubleshoot wireless LANs.
- **CS-351 Wide Area Network Technologies:** Introduction to the various wide area networks (WANs) access technologies used to connect small-to medium-sized business networks. This course focuses on WAN technologies including PPP, Frame Relay, broadband links, and WAN security concepts.
- **CS-445 Multimedia Applications:** This course focuses on the fast emerging field of multimedia authoring and application development. It covers multimedia representation, storage, and communication. It provides the students with the basics of integrating audio, video, and textual sources into multimedia objects Software and hardware issues related to multimedia are studied in this class.
- Participated with students in learning activities beyond the classroom such as supervising two teams in the Microsoft Imagine Cup Competition for software development and both teams advanced to round two of the competition.
- Teaching several Computer Science courses such as:
  - CS-696 Multimedia Networking
  - CS-351 Wide Area Network Technologies
  - CS-350 Local Area Network Fundamentals
  - CS-251 Internetworking and Routing Basics
  - CS-250 Computer Networks Fundamentals
  - CS-241 Object Oriented Programming using C++
  - CS-140 Computer Programming in Java
  - CS-120 Introduction to Programming using C++

❖ Research and Creative Activities:

- Co-Investigator (PI: Dr. Wei Li), NSF #1137732, CREST: Center for Research on Complex Networks, 2011--2012 (5 year, continuing), \$4.8 Million.
- PI, TSU Research Seed Grant, Service Quality Management Model for Video over IP Networks, 2007, \$10,000.
- Co-Investigator (PI: Dr. Bobby Wilson), AFRL, Signal Characterization in Urban Environments, Minority Leaders Program, Sensors Technology Directorate, 2006--2007.

- Research interests include:
  - **Internet Protocol TV (IPTV) and Multimedia Networking:** Analysis of protocols and techniques used in video streaming over IP networks. Investigating IPTV service quality models to address various quality issues such as video pixilation and channel zapping period.
  - **Voice over IP:** Study and investigate the impact of various network parameters on the quality of voice calls for voice over IP services.
  - **Data Networks Quality of Service:** Monitoring and modeling of network performance to correlatethe parameters measured at one network layer to those measured at the layers above it. This approach is used to develop an end-to-end quality of service model which correlates service quality impurities observed by the user to network performance parameters measured at lower layers.
  - **Electronic Commerce:** Studying electronic commerce infrastructure using Near Field Communication (NFC) mobile phones to improve financial and business transactions.
- Established and launched a new Computer Networks Lab to be used in teaching undergraduate as well as graduate courses and added the IPTV and VoIP infrastructures to be used for IPTV and VoIP research.
- Designed and developed a VoIP Traffic Analyzer software application that correlates the traffic captured from the two ends of the phone call and calculates important VoIP quality metrics such as, latency, jitter, packet loss, and mean opinion score (MOS).
- Designed and implemented a software probe that uses Simple Network Management Protocol (SNMP) to collect various traffic quality metrics for different network services.
- Designed and implemented a game that illustrates how the Distance Vector (DV) Routing Algorithm works.

#### ❖ Services

- Served in several Departmental, College, and University Committees such as:
  - University Committees:
    - University Curriculum Council, Chair
    - University General Education Committee, Co-Chair.
    - University Ad-Hoc Committee on Low Producing Programs
    - University Library Committee
  - College Committees:
    - COST Program Assessment Committee, Chair
    - COST Curriculum Committee
    - COST Enrollment and Retention Committee
    - COST Fundraising, Events, and Community Relations Committee
    - COST Faculty Evaluation Forms Committee
    - COST Strategic Goals Subcommittee for Goal 3: Engage in Community Service
    - COST Strategic Goals Subcommittee for Goal 4: Optimize Enrollment of College-ready Undergraduate Students and Enhance Graduate Student Enrollment

- Department Committees:
  - CS Curriculum Committee
  - CS Assessment Committee
- Spearheading program assessments efforts in the College of Science and Technology. These efforts included establishing the assessment process within the college as well as engaging the faculty in the various phases of the assessment process.
  - Worked very closely with department chairs to revise program goals and the Student Learning Outcomes (SLOs) at the program level.
  - Assisted program coordinators in the development of Program Curriculum Maps which helped in identifying areas of improvements in several programs.
  - Facilitated several training workshops for faculty to spread the knowledge and ensure positive participation from faculty members in the assessment process within the college.
- Leading the University Curriculum Council since 2012. Major accomplishments in this areas are:
  - Establishing a tracking system that helps track curriculum modification proposals throughout the approval as well as the implementation phases.
  - Worked very closely with various departments to guide them in the development of curriculum modification proposals to ensure all information required for vetting and approving the proposal is included in the proposal package.
  - Coordinated the efforts among various offices involved in the implementation of curriculum modification proposals. This included the Office of the Registrar, the Office of Assessment, Planning, and Institutional Effectiveness, and the Office of Admissions.
  - Led the discussions and development of several university wide policies such as the Academic Standing Policy and the Post-baccalaureate Policy.
  - Revising the curriculum modification process to identify implementation bottlenecks. The new streamlined process is supposed to be the foundation for any future automation of the entire process.
- Co-Chairing the General Education Subcommittee and leading the discussions of the new Core Curriculum that was implemented in Fall 2014.
- Leading the efforts within the College of Science and Technology to implement a Summer JumpStart program that will improve the readiness of freshman students for their college level MATH courses.
- Designed, developed and deployed the TSU Master Scheduling System which is an online multiuser system designed to help department Chairs schedule their courses while verifying that the TSU scheduling policy is applied and checks for instructor as well as room conflicts. The system was deployed and used to generate Summer 2012 and Fall 2012 schedules.
- Led the development of the Lumina/SACSSOC Degree Qualifications Profile (DQP) Case Study for TSU. The TSU DQP Case Study is titled: **Shifting to Competency-Based Learning: Lessons from Texas Southern University Degree Qualifications Profile Pilot Project**. The Development of the case study was funded by SACSCOC and was featured by SACSCOC in the following report: **Making Case for the Application of Lumina Foundation's Degree Qualifications Profile**. The report was published in 2013.
- Served as a referee for many technical journals including IEEE Transactions on Services Computing; International Journal of Information Technology, Communications, and Convergence; EURASIP Journal on Wireless Communications and Networking; and others.

**Chief Services Officer & Senior Vice President-Services Division**(Dec 2004–Aug 2006)

Member of the Executive Management team overseeing global delivery of ready-to-ship software solutions within time and budget guidelines while ensuring that solutions remain competitive and satisfy client requirements. Manage revenue-generating initiatives incorporating professional services, maintenance procedures and training programs. Direct all lifecycle stages of product management, software development and product testing and verification. Participate in TL/9000 certification process.

- Generated more than \$2M revenues in 2005 through launching and managing the newly-formed services division which incorporated Software Solutions Development, Professional Services, Customer Services and Training activities.
- Managed \$1.2M project delivering a service level agreement (SLA) monitoring system for AT&T's optical Ethernet service overlooking end-to-end SLA assessment for both inter- and intra-regional connections.
- Delivered software solution to monitor quality of Verizon's DSL infrastructure.
- Delivered a national Service Level Agreement (SLA) Monitoring System for AT&T Operations to overlook the end-to-end SLA assessment.
- Improved the company's overall product support by establishing new team of professionals providing delivery logistics and original equipment manufacturer (OEM) product license reconciliation.
- Re-engineered Customer Services trouble tickets handling process to improve customer satisfaction.

**Director -Technical Services & Solution Development**(Jul 2004-Nov 2004)

Managed technical teams for customizing software applications and creating adaptable integration solutions between ServicePATH (Trendium's high end product) and various OSS Systems in AT&T's environment including: Syndesis NetProvision provisioning system, Micromuse NetCool fault management system, Cisco WAN Manager, Lucent Navis Family and Alcatel ASM and AMS systems.

Spearheaded successful \$2.5M professional services project for AT&T ASI to improve SLA reporting capabilities for the State of California.

**Senior Product Manager**(Jan 2002- Jun2004)

Selected to manage all aspects of high-end company product, ServicePATH 2.3, an initiative requiring several major changes to both client- and server-side architecture.

- Conducted industry, and customer research.
- Gathered and analyzed requirements.
- Defined product strategies and future enhancement plans.
- Authored technical and product collateral documents.
- Created and test prototypes.
- Oversaw quality assurance process.
- Reviewed technical designs.
- Delivered presentations and staff training.

Was appointed into this important leadership role after exhibiting solid technical background and proven capability to work with cross-functional teams.

**Technical Lead – Software Integration** (Jan 2001- Dec 2001)

Supervised and led the technical tasks of all solutions integration process including requirements gathering, functional specifications, architecture, design, and development activities for the following projects:

- **Willtell Communication SLA & Performance Management System (PRISM):** Oversaw the development of a solution that integrates Billing, Client Relationship Management (CRM), Provisioning, Fault, SLA and Performance systems; collected performance statistics from varied Element Management Systems (EMSs) and Network Management Systems (NMSs) including Lucent Navis, Nortel Presite, CoreDirector, CoreStream, Redback and Cisco devices. This solution is used for managing all Willtell IP, ATM, FR and Voice services.
- **TeleManagement Forum (TMF) Catalyst Project:** Served as Technical Lead during project initiated for inclusion in TMF CATALYST Showcase NICE 2001 Show; integrated through both CORBA and Vitria to Cisco routers using Cisco VPNSC and SAA agents, Micromuse Netcool for fault, Portal billing system and Cygent for customer care.

**Indiana University Southwest– New Albany, IN**

**2000**

**Adjunct Faculty, Computer Science Department, School of Natural Sciences**

Teaching the Foundations of Computer Networks course which covers the theory and practice of data communications between computing devices. Topics include network architecture and topology, wide-area networks, local-area networks, and the OSI layers.

**University of Louisville– Louisville, KY**

**1998 - 2001**

**Adjunct Faculty, Computer Information Systems Dept., Collage of Business and Public Administration**

**1999**

Teaching Computer Information Systems: Provides students with a solid foundation to understanding the fundamentals of information systems and the technologies required for business operations and management. Covered topics include: Business Information Systems, Information Technology Management , Telecommunications and Network technology, Internet and Intranet services, E-Commerce: models & challenges, Database management concepts, Management Information systems, and Decision Support systems.

**Teaching Assistant, Computer Engineering and Computer Science Dept., Speed Scientific School**

**1998 -2001**

Teaching C++ Programming Language: This course provides an introduction to the C++ programming language with the emphasis on applying the high/low level constructs, operators, data structures, I/O routines, pointers, and functions for the development of C++-based applications. The course also covers basic Object-Oriented programming concepts and their implementation using C++.

**The Regional IT and Software Engineering Center (RITSEC) – Cairo, Egypt**

**1996–1998**

**Project Manager**

Managed the Library Information System (LIS) Project to automate the library of the Regional Institute for Research and Development in Cairo. Supervised all project phases including initial planning, execution, control and closeout. Communicated project status to project steering committee.

Advanced through series of increasingly more responsible positions to develop and support tailored information management solutions for the Egyptian Cabinet.

- Senior Analyst *Jan. 1993 – April 96*
- System Analyst *Jan. 1989 – Dec. 92*
- Software Development Team Leader *Jan. 1987 – Dec. 88*
- Application Programmer *Oct. 1985 – Dec. 86*

Participated in the following projects during the period from 1985 to 1996

- TradeNet Project: analysis, design and implementation of the Egyptian Trade Information Network Project. This project was implemented in the 80s before the booming of the Internet. The goal of this project was to provide the Egyptian business community with updated trade and economic indicators as well as a comprehensive database with all trade legislations.
- CRNet Project: analysis, design and implementation of the Egyptian Commercial Representatives Network. The goal of the project was to establish an online information reservoir for the business community worldwide with updated information about the business opportunities to export to or import from Egypt.
- Analysis, design and implementation of a Library Information System for the library of the Egyptian Cabinet's Information and Decision Support Center.
- Analysis, design and implementation of a preventive maintenance information system (Ministry of Industry, Egypt).

## **Scholarly and Professional Publications**

- A. Sleem, M. Bao, W. Li, "Analyzing the Impact of the N-Policy on Quality of Service in Wireless Sensor Networks," The 11<sup>th</sup> IEEE International Conference on Networking, Sensing, and Control (ICNSC14), Miami FL, 2014.
- A. Sleem, O. Olumuyiwa, K. Kamel, "Real Time Performance Evaluation of Voice over IP Call Quality under Varying Networking Conditions," International Journal of Applied Sciences and Technology (IJAST), Vol. 1 No. 6, 2011.
- A. Sleem, K. Kamel, "Improving Enterprise Network Performance during Hurricane Recovery," Texas Hurricane Conference on Preparedness, Loss Mitigation, Rapid Recovery & Lessons Learned, University of Houston, Texas, 2009.
- A. Sleem, O. Essa, H. Harb, K. Kamel, "Three-Tier Architecture for Multimedia Quality of Service Management in IP Networks," Annual Review of Communication, Volume 60, International Engineering Consortium (IEC) Publications, 2007.
- A. Sleem, A. Kumar, "Handoff Management in wireless data networks using topography-aware mobility prediction," Journal of Parallel and Distributed Computing Volume 65. No. 8, 2005.
- A. Sleem, "eCommerce Infrastructure in Developing Countries," chapter in "Electronic Business in Developing Countries: Opportunities and Challenges," Idea Group Publishing, pp. 349-375, 2005
- A. Sleem, M. Ahmed, A. Kumar, "Enhancing Genetic Algorithms Performance Using Parallel and Distributed Computing Approaches," International Journal of Computers and Their Applications Volume 10. No. 3, 2003.

- A. Sleem, A. Kumar, K. Kamel, "Using Cell Topography in Predicting Intra-Cell Mobility in Wireless Internet Networks," IEEE Symposium on Computer and Communication, Turkey, 2003.
- A. Sleem, A. Kumar, K. Kamel, "Neural Network-Based Mobility Support for Wireless Internet Hosts," The sixth IEEE Symposium on Computers and communications, India, 2001.
- S. Alampalayam, A. Sleem, A. Kumar, R. Ragade, J. Wong, "Artificial Neural Network for Mobility Prediction in Enterprise Integration," EDA-2001, Las Vegas, 2001
- A. Sleem, A. Kumar, R. Ragade, "Using Design Patterns to Compose a Handoff Management Scheme for Wireless Internet Hosts." 4th International Conference on Information Technology, India, 2001.
- A. Sleem, M. Ahmed, A. Kumar, K. Kamel, "Comparative Study of Parallel vs. Distributed Genetic Algorithm Implementation for ATM Networking Environment," IEEE Symposium on Computer and Communication, France, 2000.
- A. Sleem, M. Ahmed, J. Graham, S. Elfayoumy, A. Elmaghraby, I. Karachiwala, "Web-Based Performance Visualization of Distributed Discrete Event Simulation." Winter Simulation Conference, Phoenix AZ, 1999

## Research Interests

- Wireless Sensor Networks
- Wireless data networks
- Broadband networks performance improvement
- IP Multimedia Subsystems (IMS)
- Network service intelligence
- Electronic commerce
- Parallel and distributed computing
- Artificial neural networks
- Operations support systems

## Grants and Fellowship

- TSU Research Seed Grant: Service Quality Management Model for Video over IP Networks, 2007, \$10,000.

## Awards and Honors

### Professional Honors and Awards

- Dean's Leadership Award , Texas Southern University, 2013
- Distinguished Service Award, Texas Southern University, 2011
- Dean's Leadership Award , Texas Southern University, 2011
- Five Years Excellent Service Award, Trendium Inc., 2005
- Top Gun Award for outstanding professional achievement, Trendium Inc., 2003
- Employee of the Year, RITSEC, 1997.

### Academic Scholarships, Honors, and Awards

- CECS Master of Science Award, University of Louisville, April 2000. This award is given to the Computer Engineering and Computer Science (CECS) graduate who has attained the highest cumulative scholastic standing in the departmental Master of Science program.
- Teaching Assistant, Computer Engineering and Computer Science Department, Speed Scientific School, University of Louisville, 1998-2001.



## **Professional Development and Training**

- **Preparing Future Faculty Program, University of Louisville, KY** **August 1999-April 2000**  
This two-semester program provides doctoral students with opportunities to observe and experience faculty responsibilities at a variety of academic institutions with varying missions. The program addresses the full scope of faculty roles and responsibilities that include teaching, research, and service emphasizing on how the expectations for these responsibilities often differ in different campus settings. It also allows students participating in the program to have multiple mentors and receive reflective feedback not only for their research activities but also for their teaching and service activities.
- **Iterative Software Development Using Rational Unified Process (RUP), Trendium, Inc., FL 2001**
- **Software Project Management, Trendium, Inc., FL 2002**

## **Memberships and affiliations**

Institute of Electrical and Electronics Engineers (IEEE), 1998-Present