Norfolk State University

Jonathan Graham

Associate Professor of Computer Science

Department of Computer Science

Robinson Technology Center 310L

(757) 823-9445

(757) 823-9229 fax

jmgraham@nsu.edu

EDUCATIONAL EXPERIENCE

Cyber Network Forensics, Information Networking Institute and Cy Lab, Carnegie Mellon University, July, 2011.

Cyber Network Forensics, Information Networking Institute and Cy Lab, Carnegie Mellon University, July 12 – July 23rd, 2010.

Boot Camp INFOSEC Institute Digital Forensics, December 7th - December 11th, 2009.

Boot Camp SANS SEC503: Intrusion Detection In-Depth, December 11th – December 16th.

Doctor of Philosophy, Computer Science, 2005, University of Idaho
Advisor: Dr. James Alves-Foss.
Thesis: Efficient Allocation in Distributed Object Oriented Database Systems with Capacity and Security Constraints.

Master of Science, Computer Science, 1984, Jackson State University.
Advisor: Dr. Prem Bhalla.
Thesis: Efficient Generation of Poisson Deviates.

Bachelor of Science, Mathematics, and Computer Science, 1982, University of the West Indies.

EXPERIENCE

Teaching, Extension and Research Appointments:

- Research Assistant (SPSS programmer and Analyst), School of Technology, Jackson State University, Jackson, Mississippi, 1983-1984
- Teaching Assistant, Department of Computer Science, Jackson State University, Summer 1984.
- Instructor, Norfolk State University Department of Computer Science, August 1984 - 1998.
- Norfolk State University School of Technology, SIMNET Advisory Board 1987-1990.

- Assistant Professor, Norfolk State University Department of Computer Science, August 1998 - 2006.
- Member of ODU/NSU INSITE IWTF grant to help in the retention of women and minorities in Computer Science (2004 - 2007).
- Associate Professor, Norfolk State University Department of Computer Science, August 2006 - present.
- Research faculty on US Army Security grant. Responsible for developing intelligent software to fuse security data from several sources. The fused data will then be used to make the best possible security decisions (2005 — present).
- Director of Norfolk State University Information Assurance Research, Education and Development Institute (IA-REDI) (2008 – Present)
- Director of Technical Research, Department of Energy, National Nuclear Security Administration Norfolk State University, Massie Chair of Excellence in Cyber Security (2009 - Present).

Consulting:

- Information Assurance curriculum advisor to Virginia State University, Mississippi Valley State University and Tougaloo College, Mississippi.
- Consultant, University of the West Indies School of Continuing Studies, Tortola, BVI. I developed a registration management system. January 1995-December 2000.
- Consultant, Norfolk State University Office of Development, I designed and implemented a database management package for the office of development to keep track of donations and donors. This program completely automated the ledger entry, report generation, and account inquiry process.

TEACHING ACCOMPLISHMENTS:

Areas of Specialization:

- Computational Intelligence
- Information Assurance
- Computer Simulation.

Students Advised:

Academic advising

- Averaging 20-25 per year

- School of Science, Science and Technology Academicians on the Road to Success (STARS).

Master's Research students

- Carloz High: Evaluation of Face Recognition software, August 2010 – May 2011.
- Tremaine Rawls & Oyadimola Oluwatimi: The Enhancement and Improvement of Biometric Software Related to Latent Fingerprint Process, August 2010 – Present.
- Princess Jessie: Hands on Laboratory Assignments for a Computer Security Concepts course, August 2010 – Present.
- Tashonia Blackwell: Comparison of password cracking techniques for Windows and LINUX machines, July 2010 – Present.
- Tonya Fields: Futuristic Intrusion Detection Enhanced Learning System (FIDELS), August 2008 – Present.
- Alicia Wright: Design of an Online Information Assurance Course, Jan 2009 – March 2010.
- Janice Smith: Developing a Model to Predict the Academic Success of Entering Computer Science Freshmen at Norfolk State University, March 2010.
- Effectiveness of Computer Security policies on Academic campuses (Lisa Carrington, August 2006 – December 2009).

Undergraduate students

- Kendra Wadsworth: Determining the Social Security Numbers of a population of Virginia residents using publicly available data, August 2010 – Present.
- Dereck Franklin: Defeating RSA encryption using a genetic algorithm approach to factoring large integers, August 2008 – May 2009.
- A comparative survey of techniques for efficient allocation of Emergency Facilities and Vehicles (Megan Hunter and Lillian Riddick August 2006 – December 2008).
- Visualizing Networking security using Multiple Security Devices (Erica Brown, January 2006 - May 2006).
- An alumni website for Computer Science majors (Rachel Bonas, 1998-1999).
- Securing a Computer Web site (Melva Edwards-Reynolds, 1997-1998).
- Web based distance learning, (Kasondra Lewis, 1997-1998).
- A multimedia database to support an instructor web site (Cesar Gonzalez, 1996-1997).
- Teacher/Student Interactive Web site (Belinda Essex, 1996-1997).

- Computer Human-Interaction in the development of an efficient user Interface (Tamla Walcott, 1996-1997).
- Comparison of Windows Development Tools (Kathy Liu, 1995-1996)
- An expert system for Freshman class scheduling (Pamela Fennell, 1995-1996).
- A student Advising Package for the Computer Science Department (Darnita Ashby, 1994-1995).
- Design of an Arabic/Farsi Language Word-processor (Mehrdad Mahmoudi, 1993).
- Simulation using Ada (Camille S. Deleveaux, April 1989).
- Graphical Tool for Identification of Statistical Distributions, (Sherlyn Smith 1989).
- Simulation of a Traffic Control System (Deborah Wingate, 1989-1990)
- Theoretical and Graphical testing of Random Number Generators, (Yvette Cherry, 1989 - 1990).
- Digital Simulation of Pulse Coded Modulation (PCM), (Brenda Ellis, 1988-1989).
- An efficient Method for Sampling Poisson Deviates on a Microcomputer, (Sharon Wimbush, 1986 - 1987).

Honors and Awards:

Department of Computer Science Teacher of the Year 1996, 1998

AT&T award at Jackson State University, for student with highest GPA in Master's program

College of Science Engineering and Technology grantsmanship award, May 2010.

SCHOLARSHIP ACCOMPLISHMENTS:

Publications

- J. Graham and C. Akujuobi. -Performance Evaluation of popular methods for generation of Poisson Deviates‖, University of Pittsburgh 8 Annual Conference on Modeling and Simulation, April 1987.
- J. Graham. –0ptimal Placement of Distributed Interrelated Data Components using Genetic Algorithms.‖ Late breaking papers section, International Conference on Genetic Programming, University of Wisconsin, July 1998.

- J. Graham and C. Hinds. -Optimal Allocation of a Distributed Database using Genetic Algorithms.‖ Proceedings of the South East ACM Regional Conference, Mobile, Alabama, April 1999.
- J. Graham. ―Rule and Data Placement in an Object-oriented Database (Fast Abstract)‖, Proceedings of the South East ACM Regional conference, Raleigh, North Carolina, 2002.
- J. Graham and J. Alves-Foss. -Static Allocation in Distributed Object Oriented Databases Using Genetic Algorithms‖, Proceedings of the 41 ACM Southeastern Regional Conference, Savannah, Georgia, March, 2003.
- J. Graham. ―Security Constraint Allocation in Distributed Object Databases‖, IC AI'03, Las Vegas Nevada, June 2003.
- J. Graham. ―Efficient Allocation in Distributed Object Oriented Databases‖, Proceedings of the ISCA 16 International Conference on parallel and Distributed Computing Systems, Reno Nevada, August 2003
- J. Graham and J. Alves-Foss. -Efficient Allocation in Distributed Object Oriented Databases with Security Constraints‖, International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems (IJUFKS), Special Issue on Cybertrust and Security, currently under revision.
- Ph.D. Dissertation 2005, ―Efficient Allocation in Distributed Object Oriented Database Systems with Capacity and Security Constraints‖.
- Recapturing the Interest of Females in Computer Science at Norfolk State University: Jonathan M. Graham, Cheryl V. Hinds, Mary L. Williams
- Static Allocation in Distributed Object Oriented Databases Using Simulated Annealing Algorithms: J. M. Graham, M. L. Williams 21st International Conference on Computers and Their Applications (CATA 2006)
- Theoretical properties of two problems of distribution of interrelated data: Jonathan M. Graham, ACMSE 2006: 44th ACM Southeast Conference

- A Heuristic Approach for Locating EMS Facilities and Vehicles: Constance Lightner, Jonathan Graham PDPTA'06 - The 2006 International Conference on Parallel and Distributed Processing Techniques and Applications.
- Jonathan Graham, Janice Smith: Developing a Model to Predict the Academic Success of Entering Computer Science Freshmen at Norfolk State University, ISCA 22nd International Conference on Computer Applications in Industry and Engineering (CAINE-2009), November 4 - 6, 2009, San Francisco, CA, USA.

- Empirical Channel Model for 2.4GHz IEEE 802.11 WLAN Author(s): Stanley L. Cebula III, Aftab Ahmad, Jonathan M. Graham, Cheryl Hinds, Luay A. Wahsheh, Aurelia T. Williams, and Sandra L. DeLoatch, The 2011 International Conference on Wireless Networks. Las Vegas, Nevada.
- D. E. Burgner, L. A. Wahsheh, A. Ahmad, J. M. Graham, C. V. Hinds, A. T. Williams, and S. J. DeLoatch. Using Multi-Level Role Based Access Control for Wireless classified Environments. In Proceedings of the International Conference on Communications Systems and Technologies, October 2011.

- S. L. Cebula, A. Ahmad, L. A. Wahsheh, J. M. Graham, A. T. Williams, C. V. Hinds and S. J. DeLoatch. “Location Determination Systems for WLANS“, Proceedings of the ICW’11, the 2011 International Conference on Wireless Networks, Las Vegas, NV, July 2011.
- A. T. Williams, A. A. Evans and J. M. Graham, “Future of Digital Forensics: A Survey of Available Training“ , Proceedings of the FECS’11, the 2011 International Conference on Frontiers in Education: Computer Science and Computer Engineering, Las Vegas, N.V. July 2011.
- S.L. Cebula, A. Ahmad, L. A. Wahsheh, J. M. Graham, S. Deloatch and A. T. Williams. How Secure is WiFi MAC Layer in Comparison with IPsec for Classified Environments? In Proceedings of the 14th Communications and Networking Simulation Symposium, pp. 109 - 116, April 2011.

Presentations and Other Creative activities:

- Made presentations to graduate students in the Norfolk State University School of Social Work, on the use of the computer in the area of Social Work.
- Departmental colloquium presentation on applications of Monte Carlo simulation
- Department colloquium presentation on database partitioning and allocation
- Department colloquium presentation on solvable and unsolvable problems
- Cyber security at Norfolk State University, A presentation to Senator Jim Webb delegation, September 24th, 2009.
- Cloud Computing security capabilities at Norfolk State University, A presentation at Jefferson Research Laboratory, June 2010.

Training Workshops:

- Information Assurance Training of Mississippi Valley State University faculty and Integration of IA modules into existing courses at Mississippi Valley State University, June 1st – June 4th, 2010.
- Integrating Information Assurance in the Computer Science curriculum, a training workshop MVSU 2010, June 1st – June 4th, 2010.
- Developed course materials and made several presentations at the Norfolk State University Faculty Retraining Workshops, 1996-1997.
- Developed course materials and made several presentations at the University of New Mexico Alliance 2000 Computer training Workshops, Norfolk State University. February, 1997.
- Developed course materials and made several presentations at the University of New Mexico Alliance 2000 Computer training Workshop, Norfolk State University, April, 1997.
- Provided assistance at the Collegis organization Norfolk State University faculty training workshop, Norfolk State University, July 1998.
- Developed course materials and provided computer literacy training for Elementary, Middle and High School teachers from Charles City school district.

Grants:

- Inprise Curriculum software grant, June 1998
- School of Science STARS (Science and Technology Academicians on the Road to Success) grant, Summer 2004. -Genetic algorithms for data allocation‖, student mentored, Jesse Owens, internal award of $7,500.
- School of Science STARS (Science and Technology Academicians on the Road to Success) grant, summer 2005, –‖Modeling and simulation of disk clustering techniques‖, student assistant, Ms. Iris Scott, internal award of $8,000.

- School of Science STARS (Science and Technology Academicians on the Road to Success) grant, summer 2006, –A genetic algorithm for assigning emergency vehicles to facilities and facilities to city grids‖, internal award of $8,000.
- School of Science STARS (Science and Technology Academicians on the Road to Success) grant, summer 2007, –A simulation tool for modeling Wireless Sensor Networks‖, internal award of $8,000.
- School of Science STARS (Science and Technology Academicians on the Road to Success) grant, summer 2008, –A graphical simulation tool for modeling Wireless Sensor Networks‖, internal award of $8,000.
- School of Science STARS (Science and Technology Academicians on the Road to Success) grant, summer 2009, –An enhanced graphical simulation tool for modeling Wireless Sensor Networks‖, internal award of $8,000.
- School of Science STARS (Science and Technology Academicians on the Road to Success) grant, summer 2010, —Design of a Linux and Microsoft Windows security test bed‖, internal award of $8,000.
- Co- Principal Investigator Establishing a Massie chair of Excellence in Cybersecurity at Norfolk State University, $750,000 awarded by the Department of Energy, September 2009 – September 2012.
- Principal Investigator: Improving the Forensics capabilities at Norfolk State University, $53,000 awarded by DoD, September 2010 – December 2011.
- Co-Principal Investigator: Collaborative Research: Implementation of Vertically Integrated Curriculum for Cognitive Radio Communications,$95,000 awarded by the National Science Foundation, September 15, 2009 - August 31, 2011.

- I was the Principal Investigator on the 2011 Department of Defense Information Assurance Scholarship Program grant submitted February 2011. The grant was funded in the amount of **$65K.**

- Co-Principal Investigator: Collaborative Research: Implementation of Vertically Integrated Curriculum for Cognitive Radio Communications,$95,000 awarded by the National Science Foundation, September 15, 2009 - August 31, 2011.

- I was the Principal Investigator on the following grant: Title: Cyber Service Education and Training at Norfolk State University Date Submitted in response to National Science Foundation Scholarship For Service : February 2011, **Total Award $628,110K**

SERVICE:

Department of Computer Science Committees:

- ACM student advisor 1991-2001, 2005
- Co-chair retention, recruitment and advancement 1992-2000
- Chair retention committee 2005 -2006
- Chair recruitment committee 2005-2006.

- Advisor Information Assurance Club

University Committees:

- Academic Computing Committee 1998-99
- Co-chair University wide Faculty/Student grievance committee
- Member of search committee for Vice President Student Affairs

- Co-chair of the computer support group providing computer technical support to the visiting SACS accreditation team, 1997

Other Service:

- Represented Norfolk State University at high school recruiting sessions.
- Computer Science Advanced Placement (AP) test grader 1998, 1999, Clemson, South Carolina.
- Appeared on NSU radio discussing issues involved in purchasing a personal computer.
- Publications

Professional and Scholarly Organizations:

- Association for Computing Machinery (ACM)
- Institute of Electrical and Electronic Engineers (IEEE) Computer Society