

Cordell Clay Davidson, PhD

432 Ridgecrest Court, Mobile, AL. 36609

251.234.1532

davidson.clay@gmail.com

clay@his.com

PROFILE

Software developer, trainer, manager, teacher, accountant and researcher. Research interest in aspects of cyber-security and areas of robotics and artificial intelligence

EDUCATION

PhD Computing	2018
<i>University of South Alabama</i>	
<i>Research Topic: Applying Moving Target Defensive Techniques towards the Cyber-Security of Programmable Logic Controllers</i>	
Committee Chair: Dr. Todd R. Andel	
Master of Science Computer Information Systems (MSCIS)	2008
<i>University of South Alabama</i>	
<i>Thesis topic: Voice Enabled Robotic Interface in a Noisy Environment</i>	
Committee Chair: Dr. Eugene Simmons	
Bachelor of Science Business Administration (BSBA)	1982
<i>University of Southern Mississippi</i>	
Major: Accounting	

PUBLICATIONS

Cordell C. Davidson, Todd R. Andel J. Todd McDonald, Looking at a Moving Target Defense of EhternetIP, *IEEE SoutheastCon 2022*, Mobile, AL, March/April 2022

Cordell C. Davidson, Applying Moving Target Defensive Techniques Towards The Security Of Programmable Logic Controllers, PhD Dissertation, University of South Alabama, Mobile, AL., Dec 2018

Cordell C. Davidson, Todd R. Andel, Mark Yampolskiy, J. Todd McDonald, W. Brad Glisson, and Tom Thomas, On SCADA PLC and Fieldbus Cyber Security, *13TH International Conference on Cyber Warfare and Security*, Washington DC., March 2018

Cordell C. Davidson and Todd R. Andel, Feasibility of applying Moving Target Defensive Techniques in a SCADA System, *11th International Conference on Cyber Warfare and Security*, Boston, MA., March 2016

Cordell C. Davidson, Joel Dawson, Paul Carsten, Mark Yampolskiy, and Todd R. Andel, Investigating the Applicability of a Moving Target Defense for SCADA Systems, *Proceedings of the 3rd International Symposium for ICS & SCADA Cyber Security Research*, Ingolstadt Germany, Sept. 2015

Cordell C. Davidson, Michael V. Doran, and Thomas G. Thomas, Investigating a Voice Enabled Robotic System in a Noisy Environment, *CIC'08 17th International Conference on Computing*, Mexico City, Mexico, December 3-5, 2008 (poster and extended abstract)

Cordell C. Davidson, Michael V. Doran, W. Eugene Simmons, and Thomas G. Thomas, Veronica JagBot – A Robotic Campus Tour Guide”, *2008 International Conference on Artificial Intelligence IC-AI'08*, Las Vegas, NV., June 2008

Cordell C. Davidson, Investigating a Voice Enabled Robotic System in a Noisy Environment, *Masters Thesis*, University of South Alabama. Mobile, AL., June 2008

EXPERIENCE

University Instructor

Aug 2019-Current

University of South Alabama, Mobile, AL.

Taught or currently teach graduate level course in Distributed Systems (CSC532) and undergraduate courses in Secure Software Engineering (CSC440), Concurrent and Distributed Computing (CSC399), Operating Systems (CSC322), Digital Logic (CSC228), Programming Concepts in Java (CS120), and Data Structures and Algorithms in C++ (CSC231). Additional duty providing advisement to students. Member of the School of Computing Scholarship Committee; Faculty Senate; and ABET accreditation team.

Post-Doctorial Fellowship

Feb. 2019-Aug. 2019

University of South Alabama, Mobile, AL.

Performed research investigations as directed towards the study of EEG patient data as a dynamical system as a researcher within the School of Computing.

Principal

2007-Current

DBA - Davidson Investment Group, Mobile, AL.

Manage family philanthropic activities primarily consisting of University Scholarship Endowments, and personal scholarship gifts. Manage family investments in stocks, bonds, residential real estate, business loans and other instruments.

Senior Technical Consultant

1999-2007

Deltek Systems, Inc., Reston, VA.

Returned to this ERP Software development firm to provide on-site consulting services to a national client base of clients. Also provided on-site and company site training of personnel as well as database, network, and software support as needed. Often tasked to work with the most difficult and demanding clients to keep them calm and focused and non-litigious. Often turned out to be less related to our software and more to the client's internal corporate dynamics.

Worked closely with client technical, managerial, accounting, and executive personnel to identify the underlying problem and develop a successful resolution. In every instance, the problem was eventually identified and resolved. Required knowledge of accounting; our software systems; various versions of Windows, Linux, Unix, and Netware; versions of Oracle, SQL Server, Sybase, and SQLBASE relational databases; various networking protocols such as TCP/IP and IPX/SPX; switches, gateways, firewalls, network taps and any other tool that might be of use to include soft skills of analysis, persuasion, and conflict resolution.

Common consulting issues were Oracle database tuning, database backup and restores, installation of Windows server software, installation of Oracle and other relational database systems, installation of Costpoint and other enterprise software, patches, updates, remote access, and on-site training of client technical staff. Other issues revolved around personality conflicts and possible loss of companywide influence leading to reluctance to successfully integrate the software. Provided pre-sales technical assistance to various sales teams via conference calls and on-site visits.

Worked from home as needed on a part-time basis for most of these years due to a multi-year recovery from a life altering motorcycle accident. Company was exceptionally good to me. Preferred early retirement and staying in Alabama over choice to either travel again on a full-time basis or to move back to the Washington DC. area. Devoted myself to graduate studies with an eye towards a move into academia.

Manager/Director of Back Office Systems

1998-1999

Johnson Controls Inc., Cocoa Beach, FL.

Managed technical aspects of information systems for a division of this Fortune 200 company.

Worked with executive management, in-house accounting professionals, in-house IT professionals, Deltek General Consultants, and Deltek technical and general support to map and migrate data from the file based Deltek System-1 accounting system to the Deltek Costpoint ERP Suite on a Unix based Oracle RDBMS.

Developed good working relationships with accounting, payroll, and other affected departments to understand their needs and manage their expectations.

Resolved many inter-departmental issues between department heads concerned with loss of power, people, or prestige due to lack of familiarity with new system being installed. Often became the "translator" between accounting and technical teams so that both sides understood what was expected from the other and what could and could not be done with the new system. One-year project plan was completed on time with good internal acceptance and was considered a great success.

Key member of team tasked with developing IT strategy, costing, and implementation plans for information systems to be included as part of a request for proposal (RFP) for various government contracts.

Manager Technical Services Group

1993-1998

Deltek Systems, Inc., Reston, VA.

Managed final line of technical support and provided technical consulting, and educational training services for this ERP software development firm. Any technical issue involving any of the company's products would be elevated no further than my group. Others were often consulted for knowledge and advice, but my team was ultimately responsible for identifying and resolving every particularly thorny technical issue that affected a Deltek supported product.

Identified basic technical knowledge required for entry level support staff positions and developed and taught a training program for all new technical hires. Subjects included networking concepts, Windows Server installation, Oracle and SQL Server database installations, Costpoint and Time & Expense installations, SQL language syntax, and various troubleshooting techniques and tools.

Developed and taught first Costpoint System Supervisor class. Was the only instructor for several years. This three-day class was taught eight hours a day every quarter. Offsite classes were taught at client sites when the need arose.

Original member of System Solutions Group tasked with identifying areas of corporate technical ignorance and ensuring that knowledge was gained and disseminated.

Was the companies first technical consultant for Costpoint and what was originally known as Electronic Timesheet.

Wrote the installation program, created the installation disks, and installed the first copy of Costpoint ever released. Worked closely with the entire Costpoint team to ensure that the roll-out was a success.

Tools included C++, SQLWindows, SQL, SQLRobot, Netware, Unix, Windows NT Server, and various Windows desktop versions.

<p>Lead Programmer <i>Best Programs, Inc., Reston, VA.</i> Member of team that developed Federal and State tax software for this tax software development firm. Worked variously in program design, programming, testing, and documentation. Lead programmer for several State returns. Tax Partner software product was sold to Intuit and renamed Turbo Tax and sold to H&R Block to become basis of their internal tax software system. Worked with C++, Basic, Netware, VAX, DOS.</p>	1991-1993
<p>Tax Auditor <i>Arlington County Department of Revenue, Arlington, VA.</i> Performed county tax audits requiring travel to local businesses to review accounting ledgers and journals. Taught County staff to use everything from a mouse to Microsoft Windows, Excel, and Word. This greatly increased the speed and efficiency of audit process.</p>	1990-1991
<p>Staff Member <i>BDM Inc., McLean, VA.</i> Accounting and Finance support on multi-million-dollar Naval Industrial Improvement Program (NIIP) for this defense contractor. Helped learn and develop scripts and programs to automate the financial reporting requirements of the program. Used Lotus 123 and dBase III PC-based software to automate the previously manual system. Monthly reports taking six weeks to produce were eventually completed in a few days. Used times saved to automate other tasks, learn various other languages and tools, and teach others how to do the same</p>	1988-1990
<p>Retail Manager <i>Devlin Enterprises, Tucson, AZ.</i> Managed furniture stores in Santa Fe, NM, and Tucson, AZ. Started in credit approval and moved up through sales to assistant manager of the Santa Fe store and then manager of our Tucson location.</p>	1986-1988
<p>Soldier <i>U.S Army National Guard, Pascagoula MS. and Albuquerque, NM.</i> Enlisted in National Guard and attended Army basic training, enlisted combat engineering school, Officers Candidate School and Engineer Officers Basic Course.</p>	1984-1988
<p>Accountant <i>Oliver H. Van Horn Company, New Orleans, LA.</i> Financial, tax, and payroll accounting. Learned the use of Lotus 123 and helped move company from reliance upon manual ledgers and journals to the use of the new IBM PC. Moved from using a paper spreadsheet that was six feet square and required an eraser and manual recalculation of all totals to the use of Lotus 123 spreadsheets which allowed for faster calculations, what-if scenarios, and macro programming decreasing time to close and increasing ability to analyze underlying data.</p>	1982-1984

CERTIFICATIONS AND MEMBERSHIPS

- Certified Public Accountant (CPA), Virginia 1989**
 - Member, Society of American Military Engineers, 1986**
 - Member, Institute of Electrical and Electronics Engineers (IEEE)**
 - Member, Association of Computing Machinery (ACM)**
 - Member, Upsilon Pi Epsilon, Honor Society in Computing/Information Disciplines**
 - Officer, University of South Alabama Computing Alumni Association**
 - Oracle Master Database Administrator (DBA), Oracle Education, 1997**
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