

Mario Caire  
[mcaire@utep.edu](mailto:mcaire@utep.edu)  
915-328-7762  
October 2014

## 1 Education

The University of Texas At El Paso	Electrical and Computer Engineering	Ph.D.	May 2012
The University of Texas At El Paso	Electrical and Computer Engineering	M.S.	July 2003
The University of Texas at Austin	Psychology	B.A.	Dec. 1992
El Paso Community College	Liberal Arts	A.A.	May 1990

## 2 Work Experience

**Manager**, January 2007 – Present

*Contracts and Grants &*

*The Institute for Policy and Economic Development (IPED)*

The University of Texas at El Paso | 500 W. University Ave. | El Paso, TX 79968 | 915.747.5929

Job Duties:

- Conduct survey and industry cluster research using a variety of techniques (cluster analysis, spatial analysis, data analysis, etc.) and applying a variety of tools including MicroSoft Excel, SPSS, CRAN R, and ArcGIS
- Apply IT project management to development of Web-based database applications using PHP, HTML, JavaScript, MySQL, and Apache web server
- System administration of Windows 2000, 2003, and 2008 server, Red Hat Linux, CentOS
- Computer networking and resolving wired and wireless networking issues
- Application of computer security concepts to servers, desktops, and laptops (e.g. physical security, passwords, shared folder permissions, security patches, etc.)
- Supervision of work studies and research assistants
- Manage a 20 station computer lab and survey call center

**Volunteer for the International Conference on High Performance Computing, Networking and Storage**, SC10, November 2010 and SC11, November 2011

*SCinet Volunteer*

Volunteer Duties:

- Assist SCinet, the world's fastest network, with installation of single mode and multimode fiber optic cabling
- Configuration and operation of Infiniband switches
- Conference logistics
- Receive, enter and route IT help desk tickets submitted by conference vendors

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**Computer Lab, System Information, and User Support Manager**, December 2000 – January 2007  
*Developmental English and Mathematics Department*  
The University of Texas at El Paso | 500 W. University Ave. | El Paso, TX 79968 | 915.747.5693

Job Duties:

- System administration of file, Web, and application servers running on systems ranging from Windows 2000 and 2003 Server to RedHat Linux
- Manage three computer labs with a total of 90 computers
- Provide information technology, networking, and technical support to faculty and staff members
- Development of Web-based applications including the Tools--MySQL Database Interface and Homepage Editor
- Computer networking and resolving wired and wireless networking issues
- Application of computer security concepts to servers, desktops, and laptops (e.g. physical security, passwords, shared folder permissions, security patches, etc.)

**Assistant System Administrator**, June 1999 – November 2000  
*Strategic Distribution de Mexico (SDM)*  
Strategic Distribution Inc. | 11220 Rojas Dr. Suite B-1 | El Paso, Texas 79935 | 915.590.1956

Job Duties:

- System administration of the Prophet 21 Inventory Management System on an RS6000 AIX server
- Network administration of bi-national (US/Mexico) wide area network including Cisco Routers, Micom Multiplexers, Fractional T1 and Frame-Relay Links
- Database administration of Prophet 21 Acclaim database; Write SQL queries.
- Provide local area networking and troubleshooting support

### 3 Teaching Experience

**Lecturer**, Fall 2013 – Present  
*Criminal Justice Department*  
*The Intelligence and National Security Studies Program (INSS)*  
The University of Texas at El Paso | El Paso, Texas

Courses Taught:

Digital Crime and Digital Terrorism (Criminal Justice)  
Introduction to Cybersecurity (INSS)

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**Lecturer/Facilitator**, February 2011 – Present  
*The College of Information Systems and Technology*  
The University of Phoenix | Santa Teresa, New Mexico

Courses Taught:

Information Security Principles and Practices, Information Technology Project Management, Intro to Java Programming, Advanced Java Programming, Intro to Web Design, Advanced Web Design, The Unix/Linux Operating System, Local Area Networks, Networks and Telecommunications, Business Information Systems

**Basic Mathematics and English Instructor**, September 1993 – May 1999  
*Math and Science Division and Basic Academic Skills Program*  
El Paso County Community College | 919 Hunter Dr. | El Paso, Texas | 915.831.EPCC

Job Duties:

- Teach basic mathematics and algebra courses and tutor students in algebra, trigonometry, calculus, probability, and basic statistics
- Teach basic academic skills courses in English and reading

## 4.1 Academic Publications

- M. Caire, F.J. Lopez, and D.H. Williams, *Distributed Identification of the Lineality Space of a Cone*, Journal of Supercomputing. ISSN: 0920-8542 (Print, pp. 163-182) May, 2009; 1573-0484 (Online) July 2008. DOI 10.1007/s11227-008-0222-0. Kluwer Academic Publishers, Hingham, MA, USA.
- M. Caire, F.J. Lopez, and D.H. Williams, *Identification of the Lineality Space of a Cone Using a Heterogeneous Network*, Conference Proceedings of the 7<sup>th</sup> World Multiconference on Systemics, Cybernetics, and Informatics, p1. Vol. 5, July 2003.
- M. Caire. Modeling Power Consumption of High Performance Computer Clusters. Ph.D. Dissertation. The University of Texas at El Paso. 06/2012.
- M. Caire. Electronic poster: power modeling of high performance computer clusters. Extended Abstract. SC '11 Companion Proceedings of the 2011 companion on High Performance Computing Networking, Storage and Analysis Companion. pp. 107-108. 2011.

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## 4.2 Technical Reports

- M. Caire, L.M. Tomaka, D. Soden. The El Paso Mission Trail: A Review of Recommendations for Improving the Trail. IPED Technical Report, 2013-4, DigitalCommons@UTEP. March 2013. URL: [http://digitalcommons.utep.edu/iped\\_techrep/95/](http://digitalcommons.utep.edu/iped_techrep/95/).
- M. Caire, D.L. Soden. Potential Factors for Metal Heat Treatment in El Paso. IPED Technical Report 2011-3, DigitalCommons@UTEP. September 2011. URL: [http://digitalcommons.utep.edu/iped\\_techrep/97/](http://digitalcommons.utep.edu/iped_techrep/97/).
- M. Caire, M. Gonzalez, R. Tinajero. *2009 Workforce Solutions Upper Rio Grande Employer Satisfaction Survey*. IPED Technical Report 2009-04, DigitalCommons@UTEP. January, 2010. URL: [http://digitalcommons.utep.edu/iped\\_techrep/84/](http://digitalcommons.utep.edu/iped_techrep/84/).
- M. Caire, E. K. Gibson, M. Gonzalez, *2009 Workforce Solutions Upper Rio Grande Customer Satisfaction Survey*. IPED Technical Report 2009-3, DigitalCommons@UTEP. January 2010. URL: [http://digitalcommons.utep.edu/iped\\_techrep/83/](http://digitalcommons.utep.edu/iped_techrep/83/).
- D.A. Schauer, E.K. Gibson, G. Corral, M. Caire. *2010 Economic Impact of The University of Texas at El Paso*. IPED Technical Report 2010-10, DigitalCommons@UTEP. December 2010. URL: [http://digitalcommons.utep.edu/iped\\_techrep/93/](http://digitalcommons.utep.edu/iped_techrep/93/).
- C. Olmedo, R. Tinajero, and M. Caire, *Cd. Juárez Manufacturing and El Paso Industry Linkages*, IPED Technical Report 2008-6, DigitalCommons@UTEP. August 2008. URL: [http://digitalcommons.utep.edu/iped\\_techrep/74/](http://digitalcommons.utep.edu/iped_techrep/74/).

## 4.3 Academic Reviews

- I. Boroumand. Dynamic Length Port Knocking Authentication Technique for Mobile Cloud Computing. Revise and Accept recommendation submitted to the Journal of Supercomputing. October 2014.
- G.A. Gravvanis. Parallel Multigrid Algorithms based on Generic Approximate Sparse Inverses: An SMP approach. Revise and re-review recommendation submitted to the Journal of Supercomputing. June 2013.
- R. Ma, H. Guan, A. Liang. Performance Tuning Towards a KVM-based Embedded Real-time Virtualization System. Revise and re-review recommendation submitted to the Journal of Supercomputing. November 2012.
- P. Reviriego. Energy Efficient Link Aggregation in Ethernet. Revise and re-review recommendation submitted to the Journal of Supercomputing. August 2010.

## 4.4 Software Projects

- R. Osegueda, M. Caire, B. Ekal. **Electronic Proposal Approval Tool**. Web based application and database to digitize the research proposal approval process at UTEP. The Office of Research and Sponsored Projects, UTEP. Expected launch date: October, 2013.
- R. Osegueda, M. Caire. **PI/CoPI Percent Credit Verification Web Tool**. Web based application and database to validate principal investigator (PI) and co-PI participation in UTEP grants. The Office of Research and Sponsored Projects, UTEP. 2013.
- R. Osegueda, M. Caire, G. Corral. **Evaluation Services and Data Verification Web Tool**. Web based application and database to survey principal investigators regarding evaluation services and for grant related data verification. The Office of Research and Sponsored Projects, UTEP. 2013.
- L. Gomez, M. Caire. **Research Award Burnrate Web Tool**. Web based application and database to analyze research grant spending rates (a Work in Progress). The Office of Research and Sponsored Projects, UTEP. 2013.
- C. Olmedo, M.Caire. **2012 Cost-Benefit Home Intervention Tool or C-BHIT**. Web based benefit-cost home interventions analysis calculator. LBJ School of Public Affairs, The University of Texas at Austin. 2012. Website address: <http://www.lahn.utexas.org/cbhit/>.
- M. Caire. **The Participant Counter System**. Web based client logging and tracking application and database developed for the Upper Rio Grande Workforce Development Board. The Institute for Policy and Economic Development. 2007. Website Sandbox: <https://tools.utep.edu/pcs>.
- C. Olmedo and M.Caire. **The Paso del Norte Industry Clusters Project Web Tool**. Web based application and industry cluster database. The Institute for Policy and Economic Development, UTEP. 2006. Website address: <http://pdnclusters.utep.edu>.
- M. Caire. **IPED Computer Assisted Telephone Interview and Web Survey Tool**: A Linux-Apache-MySQL-PHP application for conducting Web based surveys and computer assisted telephone interviews (CATI). The Institute for Policy and Economic Development. 2007. Website address: <http://tools.utep.edu/survey>.
- M. Caire. **Tools -- MySQL Database Interface**: A Linux-Apache-MySQL-PHP application for building and querying large scale databases via the Internet. Developmental English and Mathematics, UTEP. 2006. Website address: [https://tools.utep.edu/mysql\\_view](https://tools.utep.edu/mysql_view).

## 5.1 Scholarships

Scholarship Name	Institution	Start Term	End Term
Patricia and Jonathan Rogers Scholarship	U.T.E.P.	Fall 2009	Spring 2012
Alliance for Graduate Education and the Professorate Fellowship	U.T.E.P.	Fall 2006	Spring 2011
Computer Science Research Stipend	U.T.E.P.	Fall 2004	Spring 2005
National Science Foundation Academic Scholarship	U.T.E.P.	Spring 2002	Spring 2007
Minority Transfer Achievement Award	U.T. Austin	Fall 1990	Spring 1992

## 5.2 Awards

- The Council for Community and Economic Research (C2ER) *Excellence in Policy Analysis Research Award*, June 2007. U.T. El Paso Institute for Policy and Economic Development, *Paso del Norte Industry Cluster Project*, <http://pdnclusters.utep.edu>.

## 6 Technical Experience

- Train and supervise research assistants in technical areas from web content management systems to operating system installation and maintenance
- GIS spatial analysis using *R*, *ArcMap*, *CommunityViz*, and *GoogleEarth*
- Unix/Linux operating systems: *IBM AIX*, *SunOS*, *Linux (Redhat, Debian, Ubuntu, Knoppix)*
- Microsoft operating systems: *DOS*, *Windows 9.x*, *2000*, *XP*, *Vista*, *7*, *NT4.0*, *2003/2008 Server*
- Cisco Certified Network Associate training and direct experience with *Cisco IOS*
- *Wide Area Network/Local Area Network/System/PC* administration and maintenance
- *TCP/IP* and *Ethernet* configuration and troubleshooting
- *C Client/Server programming*, *BASH Shell Scripting* (for task automation), *C Shell Scripting*
- Web-application development using *DOM*, *CSS*, *SVG*, *PHP*, *MySQL*, *HTML*, *HTML5*, and *JavaScript*
- *LAMP* (Linux, Apache, MySQL, PHP) based website development and administration
- Building and administering *Linux-based high performance computer clusters* using *ROCKS Cluster*
- Experience with *Fractional T1*, *Cat 5e/6*, *Single mode and Multimode Fiber Optics*, *Micom Multiplexers*, *Concentrators*, *Cisco 1720 and 2611 Routers*, *IPSec Firewall Routers*, *Frame Relay*, *Sun Ultra 5, 10, and Sunblade 100 workstations*, *IBM RS 6000 Servers*, *Dell PowerEdge 1900, 2200 and 4300 Servers*