

BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.
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NAME Graciela H Gonzalez		POSITION TITLE Assistant Professor - Research	
eRA COMMONS USER NAME GRACIELAG			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
University of Texas at El Paso, El Paso, TX	B.S.	1992	Computer Science
University of Texas at El Paso, El Paso, TX	M.S	1994	Computer Science
University of Texas at El Paso, El Paso, TX	Ph.D.	2000	Computer Systems Engineering

A. Positions and Honors.**Employment**

1992-1994 Software Engineer- EDM International, Juarez, Mexico.
 1994-1997 Project Manager, Imaging Technology Systems - EDM International, Juarez, Mexico
 1997-1998 Manager of Operations, Multimedia Production Studio - Ingles Individual Corporation, Chihuahua, Mexico.
 1998-2001 Operations and Technology Development Manager - Ingles Individual Corporation, Chihuahua, Mexico.
 2001-2006 Assistant Professor - Department of Computer Science, Sam Houston State University, Huntsville, TX
 2005-2006 Visiting Assistant Professor (Research Faculty) – Department of Computer Science and Engineering, Fulton School of Engineering, Arizona State University.
 2006-2008 Assistant Research Professor – Department of Biomedical Informatics, Fulton School of Engineering, Arizona State University
 2008- Assistant Professor – Department of Biomedical Informatics, Fulton School of Engineering, Arizona State University

Other Professional Positions and Memberships

1994 - 2007 ACM Member
 2002 – 2007 IEEE Member
 2006 - present ISCB Member
 2003, 04, 05, 06, 07 NSF Panelist
 2004 -2006 Member of Steering Committee, Consortium for Computer Science in Colleges, South-Central.
 2004 -2007 Member of Editorial Board, International Journal on Web Services Research.
 2004, 05, 06, 07, 08 Poster Session Chair, IEEE's International Conference on Web Services.

B. Selected peer-reviewed publications.

Hakenberg, J., Plake, C., Leaman, R., Schroeder, M., Gonzalez, G., "Inter-species normalization of gene mentions with GNAT." *Bioinformatics* **24**(16): i126-132.

First publicly available system to handle inter-species normalization, achieving an f-measure of 81.5% across 13 species. Achieved the best performance reported to date on human genes, 85.4%.

G. Gonzalez, J. Uribe, B. Armstrong, W. McDonough, M. Berens, "GeneRanker: An Online System for Predicting Gene-Disease Associations for Translational Research", AMIA Summit in Translational Bioinformatics, March 2008.

Presented the results of glioma gene prioritization experiments and the web-based interface for GeneRanker, which displays a table with the prioritized genes (no further visualization / annotation). First system to use the literature as a starting point.

R. Leaman and G. Gonzalez, "BANNER: An executable survey of advances in biomedical named entity recognition," Pacific Symposium of Biocomputing (PSB), pp. January, 2008.

Achieved state-of-the art performance on recognizing mentions of genes using a framework applicable to finding mentions of any semantic type where training data is available. Has been cited 6 times by authors not affiliated with the work and the accompanying open-source software has been downloaded several hundred times.

G. Gonzalez, L. Tari, A. Gitter, R. Leaman, S. Nikkila, R. Wendt, A. Zeigler, and C. Baral, "Integrating knowledge extracted from biomedical literature: normalization and evidence statements for interactions," presented at Second BioCreative Challenge Evaluation Workshop, Madrid, Spain.

Presented task-related results in three of the challenge's tasks, along with a web-based system for evaluation of mining results as a creative solution to a pressing problem for all participants. Established Dr. Gonzalez as a serious participant in the highly competitive biomedical text mining community.

C. Baral, G. Gonzalez, A. Gitter, C. Teegarden, and A. Zeigler, "CBioC: beyond a prototype for collaborative annotation of molecular interactions from the literature," presented at Computational Systems Bioinformatics Conference, San Diego, CA, August 2007.

Described a full system to allow collaborative annotation of automatically extracted text. This tool was featured in Science Magazine's NetWatch column in 2006 (312: 1721), as a highly original solution to the manual curation problem. The second version of the tool is scheduled to come out soon.

G. Gonzalez, J. C. Uribe, L. Tari, C. Brophy, and C. Baral, "Mining Gene-Disease relationships from Biomedical Literature: Incorporating Interactions, Connectivity, Confidence, and Context Measures.," Pacific Symposium in Biocomputing, Maui, Hawaii, 2007.

Described the first approach to mine gene-disease relationships for atherosclerosis through a prioritization methodology that later evolved into GeneRanker. No interface was available at that time.

Hudson, T., Gonzalez, G., "Design of a Telescope Control System", Conference on Designing for User eXperience 2005, in conjunction by ACM SIGCHI, ACM SIGGRAPH, and AIGA, November 2005.

Described a highly creative interface for the main telescope at the Hubble Observatory developed by an undergraduate student under Dr. Gonzalez's guidance. The approach departed radically from existing multi-screen interfaces to one that mimicked the view through the telescope itself.

Gonzalez, G., C. Baral, and M. Gelfond, *Alan: An Action Language For Modelling Non-Markovian Domains*. Studia Logica, 2005. **79**(1): p. 115-134.

Journal paper describing a novel logic approach to model events that occur over time.

Baral, C., Gonzalez, G*, "Using Virtual Reality to Display Answers to Multimedia Queries", in Proceedings of IEEE's International Conference on Multimedia Computing and Systems 1999 (ICMCS '99), Florence, Italy, 1999.

Describes a system that used VRML rooms to display multimedia collections (so pictures could be seen as in an art museum). The collection and the room itself could be dynamically generated using an extension to SQL designed by Dr. Gonzalez as her PhD dissertation..

Baral, C., Gonzalez, G*, Nandigam, A., *SQL+D: Extended Display Capabilities for Multimedia Database Queries*. ACM Multimedia, 1998: p. 109-114.

First paper that described SQL+D, an extension to SQL that allowed on-the-fly specification of multimedia presentations from databases. This was a highly innovative approach at a time when scripting languages such as PHP that facilitated such compositions were just being developed. Still, SQL+D is much more succinct and advanced in functionality and expressive power than any scripting language.

*G. Gonzalez was main author. The authors were listed in alphabetical order.

C. Research Support

Science Foundation Arizona \$188,364 6/01/2008 – 5/31/2009 (PI)

CAA 0277-08 “Extraction and Normalization of Biological Entity terms from Text for Gene Target Selection”

Science Foundation Arizona \$98,000 6/01/2008 – 5/31/2009 (co-PI)

CAA New Opportunity: Relationship Extractions using Late Binding

Science Foundation Arizona \$138,749 3/30/2007 – 2/28/2008 (co-PI)

Generalized Text Extraction from Life Science and Biomedicine Abstracts: empowering CBioC Mass Collaborative Curation and Reasoning Systems