Alberto Castro-Hernández

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Work Experience

Aug 2024 - current	**Associate Professor of Instruction at Texas State University, San Marcos, TX, USA** Teaching Computer Science-related courses at undergraduate level such as Data structures and algorithms; Internet software development. Member of the Undergraduate Curriculum Committee.
Aug 2020 - Dec 2024	**Assistant Professor of Teaching at Wayne State University, Detroit, MI, USA** Teaching Computer Science-related courses at undergraduate level such as Computer Science I; Algorithm design and analysis; Introduction database management systems; Ethics in Computing. Department's Scholarship Manager since 2023.
Aug 2019 - Aug 2020	**Visiting Professor at Oakland University, Rochester, MI, USA** Teaching Computer Science-related courses at graduate and undergraduate level such as Introduction to Unix and C programming; Introduction to operating systems; Design and implementation of databases; and Software Engineering. Reviewing and designing course materials for assigned courses. Provide academic help to students during office hours.
Aug 2017 - July 2019	**Visiting Assistant Professor at Miami University, Oxford, USA** Taught online and on-campus Computer Science-related courses at undergraduate level such as Fundamentals of programming and Problem Solving, and Object-Oriented Programming, Web Programming, Ethics in computing. Review and design course material for assigned courses. Provided academic help to students during office hours.
Apr - Aug 2017	**Post-doctoral Research Fellow at University of Michigan, Ann Arbor, USA** Conducted research on Natural Language Processing for learning applications. Participated in two research projects: a) analysis of a student course database structure to extract student behavior data and implement machine learning algorithms to predict it, b) investigated algorithms for the automatic expansion of a human values lexicon.
Sep - Dec 2016	**Visiting Research Scholar at University of Michigan, Ann Arbor, USA** Analyzed course database structure, then extracted student behavior data according to the objectives of the project. Learned about linguistic and learning analytics features according to the presented data, then implemented them to help in the performance classification task. Design new features or adapt the current ones based on the particularities of the project. Transformed data to reduce its dimensionality or unequal distribution of classes. Implemented machine learning algorithms to help in the prediction of the desired output; then interpret those results.
Jun 2012 - 05 2016	**Research Assistant at University of North Texas, Denton, USA**

Conducted research on the prediction of constructs exhibited during computer-based interactions between members of global software development teams (GSD teams). Collected text and temporal data of GSD teams using a customized version of Redmine (an online communication platform). Implemented real-time visual feedback displays for participants of GSD teams. Tracked data errors and inconsistencies in a database for collaborative projects. Designed and implemented an online survey system to measure collaboration constructs for GSD teams.

Aug 2012 - Dec 2016

Teaching Assistant at University of North Texas, Denton, USA

Assisted in graduate level courses at the Computer Science Department, including Human-Computer Interfaces, Artificial Intelligence and Symbolic Programming.

Nov 2007 - Dec 2011

Assistant Professor at Universidad Politécnica de Altamira

Taught undergraduate level courses including Programming logic, Discrete mathematics, Operative Systems. Collaborated in the design of the Information Technology Engineering curricula.

Sep 2007 - Aug 2008

Lecturer at Universidad del Noreste, Tampico, Mexico

Taught undergraduate level courses including Computer programming, Database design and Differential calculus.

Jun - Sep, 2007

Software Engineering at Dipros Systems and Fortia Technology, Tampico, Mexico

Created databases and store procedures in SQL Server 2000 and SQL Server 2005. Developed modules for different software projects. Collaborated with other software engineers using Tortoise CVS, Microsoft Visual Source Safe, and Microsoft Office 2003.

Education

Dec 2016 PhD in Computer Science, **University of North Texas**
Dissertation: "Content and Temporal Analysis of Communications to predict Task Cohesion in Software Development Global Teams".
Conducted research on communications among global teams. Developed metrics to estimate group task cohesion from team members' assessment. This work is focused on the development of features that represent collaboration, linguistic and temporal aspects of group interactions, which can help to determine cohesion status within global software development teams.

Dec 2006 Master in Computer Science, **Instituto Tecnológico de Ciudad Madero**
Thesis: "Semiautomatic generation of subcategorization frames for Spanish verbs".
Conducted research on analysis of sub categorization frames for Spanish verbs. This work focused on the development of a semi-automatic method to populate a sub categorization frame database for Spanish verbs using hypernym relations from the Spanish WordNet.

Mar 2002 Bachelor in Computer Science at **Instituto de Estudios Superiores de Tamaulipas**
Thesis: "Analysis and design of a online job board for IEST alumni".

Awards and Scholarships

2014, 2015	Complementary scholarship for Graduate Students in a Foreign Country. SRE Mexico
2012-2016	Scholarship for Externally Funded Doctoral Students. University of North Texas
2012-2015	Scholarship for Graduate Students in a Foreign Country. Competitive scholarship for Mexican students. About 30 scholarships granted per year at State-level. CONACYT Mexico
2006	Complementary Scholarship for Graduate Studies. CONACYT Mexico
2004-2006	Scholarship for Graduate Studies. Competitive scholarship for Mexican students. About 10 scholarships granted per year at Institute-level. CONACYT Mexico
1996	1st place in the Regional and State Programming Competition, Mexico.
1995	1st place in the Regional and State Programming Competition, Mexico.

Grants

2019	Grant for attending Lilly Conference (Advancing Teaching and Learning) at Traverse City. Oakland University
2014	Travel grant, Mexican Society for Artificial Intelligence to attend the Mexican International Conference on Artificial Intelligence.
2014	Travel grant, Toulouse School graduate student grant to attend Collaboratecom 2014. University of North Texas.
2009 - 2010	Grant for incorporation to academia. Mexican Secretariat of Public Education.

Publications

Referred conference papers

- **Alberto Castro-Hernández**, Kathleen Swigger, Mirna P. Ponce-Flores, J. David Terán-Villanueva. *Measures for Predicting Task Cohesion in a Global Collaborative Learning Environment*. Workshop on Global Software Engineering Education. August 2016.
- **Alberto Castro-Hernández**, Kathleen Swigger, Mirna P. Ponce-Flores. *Effects of Cohesion-Based Feedback on the Collaborations in Global Software Development Teams*. 10th IEEE International Conference on Collaborative Computing: Networking, Applications and Worksharing, October 2014.
- Rodolfo A. Pazos R., José A. Martínez F., Javier González B. Lucila Morales-Rodríguez, Gladis M., María Galiana B., **Alberto Castro H.**, *Ontology-Based Approach for Semiautomatic Generation of Subcategorization Frames for Spanish Verbs*, 3rd International Workshop on Hybrid Artificial Intelligence Systems, Burgos, Spain, September 2008.
- J. Martínez, J. González, R. Pazos, **A. Castro**, *Creation of subcategorization frames for Spanish verbs*, International Congress on Computer Science Research (CIICC 07), Orizaba, Veracruz, México, November 2007.
- G. Castilla, H. Fraire, G. Castillo, I. Cruz, **A. Castro**, *Comparison of heuristic algorithms' performance in 3-SAT problem*, Primer Congreso Nacional de Tecnologías Computacionales y Sistemas de Información, León, Guanajuato, México, September 2005.

Journals

- **Alberto Castro-Hernández**, Verónica Pérez-Rosas, Kathleen M Swigger. *Effect of Temporal Patterns on Task Cohesion in Global Software Development Teams*. Computación y Sistemas, Volume 26, Issue 2, 2022.
- **Alberto Castro-Hernández**, Verónica Pérez-Rosas, Kathleen M Swigger. *Collaboration and Content-Based Measures to Predict Task Cohesion in Global Software Development Teams*. Polibits, vol 62, 2020.
- **Alberto Castro-Hernández**, Kathleen Swigger, Mirna P. Ponce-Flores. *Effects of Cohesion-Based Feedback on the Collaborations in Global Software Development Teams*. Journal of EAI Endorsed Transactions on Collaborative Computing, vol. 15, no. 6, December 2015.
- **Alberto Castro-Hernández**, Kathleen Swigger, Fatma Cemile, Victor Lopez. *Classification of Group Potency Levels of Software Development Student Teams*. Polibits, Issue 51, p55-62, June 2015.
- Rodolfo A. Pazos R., José A. Martínez F., Javier González B., María L. Morales-Rodríguez, **Alberto Castro H.**, *Semi-automatic Generation of Subcategorization Frames for Spanish Verbs Using Ontologies and Verbs Functional Class*, Journal of Computers, Volume 4, Number 8, August 2009.

Professional Service

April 2023	Computer Science department's Scholarship Manager.
January 2023	Member of the Computer Science department's Faculty Search Committee.
January 2022	Member of the Computer Science department's Faculty Search Committee.
February 2022	Participant of OTL's Faculty Teaching Highlights series with the presentation Canvas Course Organization.
April 2021	Student-Led Technical Interviewing Practice. I helped students to find possible solutions to technical interview problems.
December 2020	Volunteer in the Michigan Accelerate Computer Science (MACS) Guinness World Record (GWR) Virtual Attempt. The attempt consisted of getting the most users to take an online computer programming lesson within 12 hours.

Other information relevant to evaluation of teaching effectiveness

Communities

- Member of the Scholarship of Teaching & Learning Teaching Circle (2021-2022)
- Member of the Large Lecture Faculty Learning Community (2022)
- Member of Hyflex Teaching Circle (2023)

Seminars and workshops

- 2021
  - Seminar: OTL Summer Course (re)Design Cohorts
  - Can I Publish My Pedagogy?
  - Welcoming Students to the Semester
- 2023
  - Bring Careers into your Classroom
  - High Impact Practices: Learning Communities
  - Creating Assignments that Promote Academic Integrity
  - High Impact Practices: First-Year Seminar

Other programs

- Mid-semester Assessment Program for 2110 (Fall 2020)
- Mid-semester Assessment Program for 2110 (Winter 2021)
- Mid-semester Assessment Program for 2110 (Summer 2021)
- Mid-semester Assessment Program for 2110 (Fall 2021)
- Warrior Teaching Week
- Mid-semester Assessment Program for 3110 (Fall 2023)

Technical Skills

Current:	Java, Python (and django), php, html, javascript, mySQL, Linux.
Programming languages:	C#, C/C++, Visual Basic .NET, Visual C++, Java, Ruby (on Rails), Perl, MatLab, LaTeX.
Databases:	MSSQL, PostgreSQL.
Operative Systems:	Windows, MacOS X.
Statistical software:	Weka, SPSS, R.
Graphic Design:	Basic level: GIMP, Inkscape, Corel Draw.

Languages

Spanish:	Native language.
English:	Professional Working proficiency.

Other courses

June 2017	Professional Development for Instructors Interested in Student Participation in Humanitarian Free & Open Source Software
March 2009	Diploma in Competence-Based Education at Coordinación de Universidades Politécnicas in Tampico, Mexico.
Nov 2002	Diploma in Graphic design at University CNCI in Tampico, Mexico.
May 1999	Diploma in Computer Maintenance at Univesidad CEDIP in Tampico, Mexico.