Edgar Eduardo Ceh-Varela

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1 EDUCATION

- **Ph.D. in Computer Science** (01/2017 - 05/2021)
  New Mexico State University (NMSU), Las Cruces, NM, USA.
  Dissertation title: *"Modeling User Preferences and Item Characteristics to Improve Group and Multi-criteria Recommendations."*
  Advisor: Dr. Huiping Cao.
- **Doctorate in Computer Systems** (08/2011 - 01/2013)
  University of Southern, Mérida, Yucatán, México.
- **Masters in Information Technology** (08/2008 - 03/2010)
  Inter-American University for Development, Mérida, Yucatán, México.
- **Bachelor of Engineering in Computer Systems** (08/1995 - 01/2000)
  Technological Institute of Merida, Mérida, Yucatán, México.

2 TEACHING EXPERIENCE

2.1 Eastern New Mexico University (02/2021 - present)

Department of Mathematical Sciences.
Portales, NM, USA.

- **Assistant Professor of Computer Science**
  - CS102/CSCI1110 CS Orientation, Spring/Fall 2022, Spring/Fall 2024, Spring 2026.
  - CS120 Intro. to Comp. Programming, Spring 2021, Summer 2022.
  - CS220 Discrete Math. for CS, Fall 2021, 2022, 2023, 2024.
  - CS234/CSCI2210 Computer Science II, Fall 2021, Spring/Fall 2022, 2023, 2024, 2025, 2026.
  - CS301 Programming Language Concepts, Fall 2021, 2022, 2023, 2024, 2025.
  - CS334 Web Applications and Development, Spring 2023, 2025.
  - CS357 Data Structures, Spring 2023, 2024, 2025, 2026.
  - CS359 Database Design and Programming, Spring 2023, 2025.
  - CS440 Computer Networks, Fall 2023, 2025.
  - CS460 Intro. to Applied Machine Learning, Spring 2024, 2026.
  - CS472 Software Engineering, Spring 2022.
  - CS488 Cooperative Education, Summer 2025.
  - EET293/CS122 TPS/Programming Fundamental C/C++, Spring 2021.

2.2 New Mexico State University (08/2018 - 12/2020)

Department of Computer Science.
Las Cruces, NM, USA.

- **Teaching Assistant**
  - CS482/CS502 Database Management Systems I, Fall 2020. (undergraduate and graduate cross-listed course)
  - CS487/CS519 Applied Machine Learning, Spring 2020. (undergraduate and graduate cross-listed course)
- **Guest lecturer**

- CS272/463 Introduction to data structures, Topic: *Linked lists*, Fall 2019. (undergraduate level)
- CS343/493 Algorithm Design and Implementation, Topic: *Sorting algorithms*, Fall 2018. (undergraduate level)

2.3 **Metropolitan Technological University** (05/2007 - 01/2017)

Department of Information and Communication Technologies.
Mérida, Yucatán, México.

- **Full-Time Associate Professor**
  All undergraduate level courses.
  - Integrative Course II [Project Management] (09/2015-12/2015, 01/2016-04/2016)
  - Information Security (09/2015-12/2015, 01/2016-04/2016, 09/2016-12/2016)
  - Application of Telecommunications (05/2015-08/2015, 05/2016-08/2016)
  - Convergent Networks (01/2014-04/2014, 01/2015-04/2014, 09/2015-12/2015, 01/2016-04/2016)
  - Integrative Course I [Project Management] (09/2015-12/2015)
  - Technical Support (01/2014-04/2014)
  - Networking Fundamentals (09/2014-12/2014)
  - Operating Systems (05/2013-08/2013, 05/2014-08/2014)
  - Servers Management II (01/2014-04/2014)
  - LAN Networking (01/2014-04/2014)
  - Servers Management I (09/2013-12/2013)
  - Wired Communications (01/2007-04/2007)

2.4 **University of Southern** (08/2013 - 08/2016)

Department of Computer Systems.
Mérida, Yucatán, México.

- **Adjunct Professor**
  - Seminar on Neural Networks (07/2016-08/2016) (graduate level)
  - Seminar on Wireless Communication Systems (02/2016-03/2016) (graduate level)
  - Seminar on Computer Networks (10/2015-11/2015) (graduate level)

Department of Computer Systems.
Cancún, Quintana Roo, México.

- **Adjunct Professor**
  - Seminar on Network Management (03/2014-04/2014) (graduate level)

Department of Telecommunications.
Mérida, Yucatán, México.

- **Adjunct Professor**
  - Information Systems Security (08/2013-09/2013) (graduate level)

2.5 **National Open and Distance University of Mexico** (09/2012 - 05/2014)

Department of Telematics.
México.

- **Adjunct Professor**
  Online undergraduate level courses.
  - Networking optimization (06/2013-09/2013, 09/2013-12/2013, 02/2014-05/2014)
  - Programming Fundamentals (01/2013-04/2013)
  - Diferential Calculus (09/2012-12/2012)

3 APPOINTMENTS

1. **Associate Professor of Computer Science** (Early Tenure) (08/2026 - present)
   Department of Mathematical Sciences.
   Eastern New Mexico University, Portales, NM, USA.
2. **Assistant Professor of Computer Science (Tenure track)** (02/2021 – 07/2026)
   Department of Mathematical Sciences.
   Eastern New Mexico University, Portales, NM, USA.
3. **Full-Time Associate Professor** (05/2007 – 01/2017)
   Department of Information and Communication Technology.
   Metropolitan Technological University, Mérida, Yucatán, México.
4. **Project Leader** (03/2009 - 03/2013)
   Department of Servers' Infrastructure.
   Yucatan State IT Government Agency, Mérida, Yucatán, México.
5. **Networking and Telecommunications Program Coordinator** (01/2008 – 03/2009)
   Department of Information and Communication Technology.
   Metropolitan Technological University, Mérida, Yucatán, México.
6. **Networking Administrator** (05/2007 - 03/2009)
   Department of Information and Communication Technology.
   Metropolitan Technological University, Mérida, Yucatán, México.
7. **Microsoft Certified Systems Engineer Specialist** (06/2005 - 04/2007)
   MC Services, Ciudad del Carmen, Campeche, México.
8. **Networking and Telecommunications Shift Manager** (02/2004 - 05/2005)
   Department of Networking.
   National Institute of Statistics, Geography and Informatics (INEGI), Mérida, Yucatán, México.
9. **Services and Technical Support Manager** (05/2003 - 02/2004)
   Digital Technology Integration, Mérida, Yucatán, México.
10. **Systems Engineer** (11/2000 - 02/2003)
    National Bank of Foreign Trade (BANCOMEXT), Mérida, Yucatán, México.
11. **Systems Programmer** (02/2000 - 10/2000)
    Autonomous University of Yucatan (UADY), Mérida, Yucatán, México.

4 PROFESSIONAL EXPERIENCE

4.1 **Eastern New Mexico University** (02/2021 - present)

Portales, NM, USA.

- **Assistant Professor of Computer Science**
  - Taught courses related to Computer Science.
  - Conducted research with undergraduate students.
  - Advised undergraduate students.
  - Serviced the Department, College, and University in multiple committees and taskforces.
  - Mentored students in research projects.

4.2 **New Mexico State University** (05/2017 - 03/2021)

Las Cruces, NM, USA.

- **Graduate Assistant and Research Assistant at the Data Mining Lab**
  Advisor Dr. Huiping Cao, Department of Computer Science.
  - Conducted research, reviewed research papers for different peer-review conferences, managed research group meetings.
  - Advised undergraduate and Master's students with their research projects.
- **Research Assistant**
  Advisor Dr. Hatim M. E. Geli, Department of Animal and Range Sciences. (Summer 2018 and 2019)
  - Preprocessed datasets for a project related to Hydrology and Remote Sensing.
  - Programmed scripts for data visualization and data extraction using Python and R.
- **Graduate Assistant**
  BIGDatA Research Experience for Undergraduates (REU) program (Summer 2017 and 2018).

- Presented induction workshop.
- Tutored students.
- Prepared payment forms.
- Supervised student accommodations.

4.3 **Yucatan State IT Government Agency** (03/2009 - 03/2013)

Mérida, Yucatán, México.

- **Project Leader (Microsoft Infrastructure)** [Assigned to this agency while maintaining my Full-Time Associate Professor appointment]
  - Implemented Microsoft infrastructure and security procedures that supported the operations of more than 80 state agencies.
  - Managed the Active Directory Domain and Services, over 50 remote sites, and 3,000 users.
  - Installed and managed an Antivirus centralized platform, and developed security policies.
  - Migrated the Microsoft Exchange email infrastructure, over 3,000 mailboxes, and four different sites.
  - Implemented the first virtualization technology platform, 20 servers using Microsoft Hyper-V and Citrix Xen Server.
  - Implemented the first public Hot-spot infrastructure to provide free WiFi access to Merida's citizens.
  - Managed projects with different state agencies and IT providers.

4.4 **Metropolitan Technological University** (05/2007 - 03/2009)

Mérida, Yucatán, México.

- **Networking Administrator** [Secondary task as part of my Full-Time Associate Professor appointment]
  - Managed the University's networking and server infrastructure.
  - Installed the first virtualization infrastructure that allowed to expand the University's service capabilities.
  - Integrated different IT technologies to provide email accounts and networking access for more than 3,000 students.

4.5 **MC Services Technology, in Outsourcing at PEMEX** (06/2005 - 04/2007)

Ciudad del Carmen, Campeche, México.

- **Microsoft Certified Systems Engineer Specialist**
  - Managed the Microsoft infrastructure for the server's security that supports PEMEX Exploration and Production operations.
  - Installed different Active Directory Domain and Services, over ten remote sites for 2,000 users.
  - Installed the first Microsoft Systems Management Server (SMS) infrastructure.
  - Installed the first Microsoft Server Monitoring Operation Manager (MOM) infrastructure.
  - Managed IT projects with different operational teams.

4.6 **National Institute of Statistics, Geography and Informatics (INEGI)** (02/2004 - 05/2005)

Mérida, Yucatán, México.

- **Networking and Telecommunications Shift Manager**
  - Managed the servers, networking, and telecommunication infrastructure.
  - Managed IT projects with different operational teams.
  - Managed IT staff.

4.7 **Digital Technology Integration** (05/2003 - 02/2004)

Mérida, Yucatán, México.

- **Services and Technical Support Manager**
  - Managed the technical support staff.
  - Managed IT projects for different customers.

4.8 National Bank of Foreign Trade (BANCOMEXT) (11/2000 - 02/2003)

Mérida, Yucatán, México.

- **Systems Engineer**
  - Managed the networking and telecommunications infrastructure.
  - Generated reports for the administration and human resources department.
  - Created the Intranet website.

4.9 Autonomous University of Yucatan (UADY) (02/2000 - 10/2000)

Mérida, Yucatán, México.

- **Systems Programmer**
  - Programmed software modules for the institutional management system.

5 RESEARCH INTERESTS

My general research areas are Applied Machine Learning, Natural Language Processing (NLP), and Data Mining. In particular, my Ph.D. research is in the area of *Recommender Systems*. I have worked on exploring Unsupervised and Deep Learning techniques and analyzing textual reviews to provide better recommendation strategies.

6 PUBLICATIONS

6.1 Work under review or in preparation

1. *Do Lightweight Vision-Language Models Really Reason? A Controlled Study of Robust Spatial Understanding for Edge Deployment.* **Submitted** to the 2026 IEEE International Conference on Future Machine Learning And Data Science (FMLDS)
2. *Evaluating the Stability of Dimensionality Reduction Techniques under Data Perturbations.* **Submitted** to the Journal of Advances in Data Analysis and Classification.
3. *Evaluating Lightweight Vision-Based Violence Detection Models for Edge Device Suitability: A Comparative Analysis.* **Accepted and presented** at the International Congress on Information and Communication Technology (ICICT) 2026.
4. *Agentic AI as a Collaborative Partner in the Modern ESL/EFL Ecosystem.* Book chapter **accepted**. Book "Innovations and Challenges of Agentic AI and Intelligent Agents in Education." IGI Global.
5. *From Concept to Classroom: Design and Implementation of a Platform for Multimodal AI-Generated ESL Quizzes.* **Accepted** and **presented** at the 2025 International Conference on Large Language Models (LLM 2025). **Presented** in December, 2025.
6. *Machine Learning on a Power Budget: Energy-Efficient Techniques for Smart Grid Edge.* Book chapter **accepted**. Book: "Edge Computing for Smart Grid." Spring Nature.
7. *Mobile App for Detecting Work-Related Stress Using Acoustic Biomarkers and Machine Learning.* **Accepted** and **presented** at the 12th International Conference on Information Management and Big Data (SIMBig), 2025.
8. *Beyond the Hype: The Efficacy of Simpler Models for Water Level Forecasting Compared to Deep Learning Architectures.* **Accepted** and **presented** at the 21st International Conference on Data Science (ICDATA'25). July 21-24. Las Vegas, Nevada.
9. *Introduction to Computer Programming.* Python textbook in collaboration with other faculty from the Department of Mathematical Sciences. In preparation.

6.2 Refereed Conference Papers

1. Imhmed, Essa, **Edgar Ceh-Varela**, and Mustafa Elfituri. *Using Scrum to Improve Student Teamwork in a Project-Based Hybrid Learning Setting.* 2025 IEEE Frontiers in Education Conference (FIE). IEEE, 2025.
2. Imhmed, Essa, **Edgar Ceh-Varela**, Ludwig Scherer, George Candal, and Ivan Sanjaya. *WIP: CodeInspector: Automated LLM-Supported CS1-Level Code Assessment.* In 2025 IEEE Frontiers in Education Conference (FIE), pp. 1-5. IEEE, 2025.

3. Shakya, SR., **Ceh-Varela, E.**, Sanjaya, I. *Lung Cancer Classification using Deep Learning Models for Edge Computing. A comparative Analysis.* IEEE International Conference on AI and Data Analytics (ICAD) 2025. June, 2025. Medford, Massachusetts.
4. Shakya, SR., **Ceh-Varela, E.**, Shakya, Martinez, J., Fisher M., Allamezadeh, H. *Optimized CNN-Based Fall Detection for Elderly Using Wearable Devices on Resource-Constrained Devices.* 18TH IEEE Dallas Circuits And Systems (DCAS) Conference 2025. April, 11-13, 2025. Arlington, TX, USA, 2025, pp. 1-6, doi: 10.1109/DCAS65331.2025.11045488.
5. Shakya, SR., **Ceh-Varela, E.**, Shakya, S., Parten, C., Zhou, Z. *Boosting Stock Predictions with Sentiment Analysis and Deep Learning Models.* 4th IEEE International Conference on AI in Cybersecurity (ICAIC). February, 2025.
6. **Ceh-Varela, E.**, Imhmed, E., Chavez, J. *Comparative Analysis of Methods for Sentiment Labeling with Limited Labeled Data.* 17th IEEE International Conference on Advanced Computer Theory and Engineering (ICACTE 2024). September, 2024.
7. **Ceh-Varela, E.**, Imhmed, E. *Investigating Freshmen Student's Coding Standards Challenges Using NLP Techniques*. In: 9th International Conference on Information, Communication and Computing Technologies (ICICCT 2024). New Delhi, India. May, 2024.
8. **Ceh-Varela, E.**, Imhmed, E., Smith, D. (2024, April) *A Mobile App Leveraging NLP Techniques for Sci-Fi Book Recommendations.* In: CCSC South Central Regional Conference (CCSC'24). ACM. Nacogdoches, Texas, USA.
9. Imhmed, E., **Ceh-Varela, E.**, Abu-Gellban, H., Kilgore, S. (2024, April). *Fostering Code Quality Practices Among Undergraduate Novice Programmers.* In: CCSC South Central Regional Conference (CCSC'24). ACM. Nacogdoches, Texas, USA.
10. Imhmed, E., **Ceh-Varela, E.**, Kilgore, S. (2023, December). *Identifying Code Quality Issues for Undergraduate Students Using Static Analysis and NLP.* In: 2023 International Conference on Computational Science and Computational Intelligence (CSCI'23). IEEE CPS. Las Vegas, Nevada, USA.
11. Imhmed, E., **Ceh-Varela, E.**, Cook, J., Parten, P. (2023, June). *Evaluation of the Performance Impact of SPM Allocation on a Novel Scratchpad Memory.* In: 2023 IEEE 47th Annual Computers, Software, and Applications Conference (COMPSAC) (pp. 972-973). IEEE.
12. **Ceh-Varela, E.**, Imhmed, E. (2023, June). *Uncovering Water Research with Natural Language Processing.* In: 2023 IEEE 47th Annual Computers, Software, and Applications Conference (COMPSAC) (pp. 972-973). IEEE.
13. Rohrbaugh, N, **Ceh-Varela, E.** (2022). *Composite recommendations with heterogeneous graphs.* In: Information Management and Big Data. SIMBig 2021. Communications in Computer and Information Science, vol 1577. Springer, Cham. https://doi.org/10.1007/978-3-031-04447-2_8
14. **Ceh-Varela, E.**, Cao, H., Le, T. (2021). *Multi-criteria and Review-based Overall Rating Prediction.* In: Karlapalem K. et al. (eds) Advances in Knowledge Discovery and Data Mining. PAKDD 2021. Lecture Notes in Computer Science, vol 12713. Springer, Cham. https://doi.org/10.1007/978-3-030-75765-6_38
15. **Ceh-Varela, E.**, Cao, H. (2020). *Recommending novel and relevant reviews to expand users' knowledge about a product.* International Joint Conference on Web Intelligence and Intelligent Agent Technology (WI-IAT'20)]
16. Zahedi, R., **Ceh-Varela, E.**, Selje II, R., Cao, H., & Sun, L. (2020). *Neural Network Based Approaches to Mobile Target Localization and Tracking Using Unmanned Aerial Vehicles.* In AIAA Scitech 2020 Forum.
17. **Ceh-Varela, E.**, Cao, H. (2019). *Recommending Packages of Multi-Criteria Items to Groups.* In 2019 IEEE International Conference on Web Services (ICWS) (pp. 273-282). IEEE.
18. Hernandez-Chan, G., **Ceh-Varela, E.** Cervera-Evia, G., and Quijano-Aban, V. (2016). *Using Semantic Technologies for an Intelligent Medical Trainer.* In International Symposium on Intelligent Computing Systems (pp. 74-82). Springer.
19. **Ceh-Varela, E.**, (2016). *An ensemble classifier for prediction of chronic kidney disease.* Paper presented at the II Congreso Virtual Internacional de Innovación, Vinculación y Educación Superior. (pp.2-19). Mérida, Yucatán, México.
20. Hernandez-Chan, G., **Ceh-Varela, E.**, Jimenez-Kantun, M. (2016). *Medic-us red social inteligente.* [Medic-us a smart social network.] Paper presented at the I Congreso Virtual Internacional de Innovación, Vinculación y Educación Superior. (pp. 65-76). Mérida, Yucatán, México.
21. Chan-May, O., Peña-Koo, J., **Ceh-Varela, E.** (2016). *Revisión sistemática de los usos de MANET.* [Systematic review of the uses of MANET.] Paper presented at the I Congreso Virtual Internacional de Innovación, Vinculación y Educación Superior. (pp. 77-93). Mérida, Yucatán, México.
22. **Ceh-Varela, E.**, Hernandez-Chan, G. (2016). *Una propuesta para el uso de Kinect y regletas Cuisenaire para el aprendizaje de matemáticas.* [A proposal for the use of Kinect and Cuisenaire rods for learning mathematics.] Paper presented at the I Congreso Virtual Internacional de Innovación, Vinculación y Educación Superior. (pp. 95-104). Mérida, Yucatán, México.
23. **Ceh-Varela, E.**, Hernandez-Chan, G., Canto-Bonilla, C. (2015). *Aprendizaje interactivo de la arquitec-*

tura Maya. [Interactive learning of Mayan architecture.] Paper presented at the VII Conferencia Conjunta IberoAmericana sobre Tecnologías y Aprendizaje. (pp. 61-66). Miami, USA.

24. **Ceh-Varela, E.**, Canto-Bonilla, C. (2014). *UTMedia: una plataforma de videos educativos.* [UTMedia: an educational video platform.] Paper presented at the VI Conferencia Conjunta IberoAmericana sobre Tecnologías y Aprendizaje. (pp. 176-179). Miami, USA.
25. **Ceh-Varela, E.** (2013). *Comparación de algoritmos de clasificación para la predicción temprana de la deserción estudiantil.* [Comparison of classification algorithms for the early prediction of student dropout.] Paper presented at the V Conferencia Conjunta IberoAmericana sobre Tecnologías y Aprendizaje. (pp.276-281). Cancún, México.
26. **Ceh-Varela, E.**, Uc-Miam, A., Canto-Bonilla, C., Lara-Martin, L. , Matos-Morfin, V. (2013). *Evaluación del aprendizaje por grados de pertenencia utilizando Logica Difusa.* [Assessment of learning by degrees of membership using Fuzzy Logic.] Paper presented at the V Conferencia Conjunta IberoAmericana sobre Tecnologías y Aprendizaje. (pp.264-269) Cancún, México.

6.3 Journals

1. **Ceh-Varela E.**, Lizama-Peraza, Y. (2025) *Beyond Recommendation: A Critical Review of Generative AI in Educational Recommender Systems*. Journal of Computer Education. 42(2). pp. 1-20, December 2025. ISSN: 2979-9279
2. Shakya, S., **Ceh-Varela, E.** (2025) *Social Media Analytics for Investigations: A Survey of Recent Trends, Challenges and Future Research Direction.* Journal of Social Media Research. 2(4). https://doi.org/10.29329/jsomer.57
3. **Ceh-Varela, E.**, Shakya, S., Imhmed, E. (2025) *Challenges in Detecting Nuanced Sentiment with Advanced Models.*Cloud Computing and Data Science (CCDS) Journal. Volume 6(2), March 2025. DOI: https://doi.org/10.37256/ccds.6220256316. ISSN: 2737-4106 (Print) 2737-4092 (Online)
4. **Ceh-Varela, E.**, Maes, L., Shakya, S. (2024) *Machine Learning Analysis of Factors Contributing to Diabetes Development.* Cloud Computing and Data Science (CCDS) Journal. Volume 5(1), January 2024. DOI: https://doi.org/10.37256/ccds.5120243751. ISSN: 2737-4106 (Print) 2737-4092 (Online)
5. Chavez, J., **Ceh-Varela, E.** *Protecting Smart Grids with Machine Learning*. The New Mexico Journal of Science. Volume 57. December 2023.
6. Kilgore, S.,Imhmed, E., **Ceh-Varela, E.** *Identifying Code Quality Issues Among Computing Undergraduates*. The New Mexico Journal of Science. Volume 57. December 2023.
7. **Ceh-Varela, E.**, Canto-Bonilla, C., Duni, D. (2023) *Application of Project-Based Learning to a Software Engineering Course in a Hybrid Class Environment.* Information and Software Technology (INFSOF) Journal. Volume 158, June 2023, 107189. ISSN: 0950-5849
8. Villanueva, S., **Ceh-Varela, E.** (2022) *Analyzing the Golden Age of Science Fiction: A Topic Modeling Approach.* The New Mexico Journal of Science. Volume 156, December 2022.
9. **Ceh-Varela, E.**, Cao, H., Lauw, H. (2022) *Performance Evaluation of Aggregation-based Group Recommender Systems for Ephemeral Groups.* ACM Transactions on Intelligent Systems and Technology (TIST). Journal.)
10. Hernandez-Chan, G., **Ceh-Varela, E.**, Sanchez-Cervantes, J., Villanueva-Escalante, M., Rodriguez-Gonzalez, A., & Perez-Gallardo, Y. (2016). *Collective intelligence in medical diagnosis systems: a case study*. Computers in biology and medicine, 74, (pp. 45-53).
11. **Ceh-Varela, E.**, Hernandez-Chan, G. (2015). *Review of Mobile Applications for Tourism.* Published in International Journal of Electronics and Computer Science Engineering IJECSE. Vol 4. Number 4. (pp. 353-356).

6.4 Refereed Workshop Papers

1. **Ceh-Varela, E.**, Hernandez-Chan, G., Villanueva-Escalante, M., Alor-Hernandez, G., & Sanchez-Cervantes, J. (2016).*A Counter Medication Classifier Using Machine Learning and Computer Vision Techniques.* Paper presented at the 2nd International Workshop on Intelligent Decision Support Systems for Industry (WIDSSI 2016). Cancun, Quintana Roo, México. (pp. 9-22)

6.5 Proceedings

1. Hall, A., Imhmed, E., **Ceh-Varela, E.** (2024). *Using Static Code Analysis to Investigate Code Smell Violations in Novice Undergraduate Student Code Submissions.* In New Mexico Research Symposium. Book of Abstracts. (p. 31).
2. Schmith D., Ceh-Varela, E. (2024). *ML-Powered Forecasting for Resilient Water Management in New Mexico's Drought-Prone Regions.* In New Mexico Research Symposium. Book of Abstracts. (p. 40).

3. **Ceh-Varela, E.**, Hernandez-Chan, G. (2015). *Tomatoes classifier using color histograms.* Published in Proceedings of the International Conference on Advances in Engineering Science and Management. (pp. 97-102).
4. **Ceh-Varela, E.**, Canto-Bonilla, C., Hernandez-Chan, G. (2014). *Plataforma de videos educativos como apoyo docente en la Universidad Tecnológica Metropolitana.* [Educational video platform as teaching support at the Metropolitan Technological University.] Paper presented at the Congreso Internacional de Investigación y Redes de Colaboración, Queretaro, Mexico.

6.6 Book chapters

1. **Ceh-Varela, E.**, Imhmed, E., Parten, C., Scherer, L. (2026). *Enhancing Code Assessment and Feedback Generation with GenAI Agents*. In: Lahby, M. (eds) Innovative Educational Assessment with Generative AI: Opportunities, Challenges, and Practical Case Studies. Information Systems Engineering and Management, vol 70. Springer, Cham. https://doi.org/10.1007/978-3-032-05306-0_13
2. **Ceh-Varela, E.**, Shakya, S. (2025). *Fundamentals of Graph Theory and Biological Network.* In S. Jha, S. Ahmad, S. Pani (Eds.), "Harnessing Artificial Intelligence-Enhanced Graph Models for Biological Discovery: Unveiling Biological Frontiers." Elsevier. DOI: https://doi.org/10.1016/B978-0-443-27608-8.00007-2
3. **Ceh-Varela, E.**, Hernandez-Chan, G., Villanueva-Escalante, M., & Sanchez-Cervantes, J. (2018). *MEDIS-IN, an Intelligent Web App for Recognizing Non-prescription Drugs.* In New Perspectives on Applied Industrial Tools and Techniques (pp. 273-292). Springer.
4. **Ceh-Varela, E.**,Reyes-Mendoza, N., Hernandez-Chan, G.(2016). *Development of an online platform for a virtual conference*. In La Tecnologia como instrumento para potenciar el Aprendizaje (Spanish Edition) (pp.350-355). CreateSpace Independent Publishing Platform.

6.7 Scientific magazines

1. Quijano-Aban, V., **Ceh-Varela, E.**, Chable-Mukul, R. (2017). *Metodología de desarrollo de software para videojuegos con tecnología Google Cast.* [Software development methodology for video games with Google Cast technology.] Revista de Tecnología e Innovación. Vol. 4, No. 13, (pp. 32-39). ISSN: 2410-3993. CONACYT-RENIECYT:2015-20795
2. Alejo-Santos, J., Hernandez-Chan, G., **Ceh-Varela, E.** (2017).*Tendencias del uso de apps moviles en la carrera de biomedicina: Caso Instituto Tecnologico de Merida.* [Trends in the use of mobile apps in the biomedical program: Case of the Technological Institute of Merida.] In Revista de la Alta Tecnología y la Sociedad Vol.9, No. 4, 2017 (pp. 112-115) ISSN 1940-2171
3. **Ceh-Varela, E.** (2014). *Lógica difusa y su uso en entornos educativos.* [Fuzzy logic and its use in educational environments.] Revista UNISUR, 10.

6.8 Books

1. Juan Antonio Lossio-Ventura, **Eduardo Ceh-Varela**, Eduardo Díaz, Freddy Paz Espinoza, Claude Tadonki, Hugo Alatrista-Salas (eds). *Information Management and Big Data. 11th Annual International Conference, SIMBig 2024, Ilo, Peru, November 20 - 22, 2024, Proceedings*.
Springer Communications in Computer and Information Science (CCIS) h978-3-031-91428-7. Published: 17 May 2025
2. Juan Antonio Lossio-Ventura, **Eduardo Ceh-Varela**, Genoveva Vargas-Solar, Ricardo Marcacini, Claude Tadonki, Hiram Calvo, Hugo Alatrista-Salas. (2024). *Information Management and Big Data.10th Annual International Conference, SIMBig 2023, Mexico City, Mexico, December 13 - 15, 2023, Proceedings*
https://doi.org/10.1007/978-3-031-63616-5 ISBN 978-3-031-63616-5. ISSN 1865-0929
Published: June 2024. Springer Nature.
3. Reyes-Mendoza, N., Olivares-Contreras, R., Rodriguez-Valencia, N., **Ceh-Varela, E.** (2017). *Innovación, Vinculación y Educación Superior: Una relacióon dinámica necesaria.* [Innovation, Bonding and Higher Education: A necessary dynamic relationship.] Mérida, Mexico: Universidad Tecnológica Metropolitana. ISBN 978-607-97344-1-1.
4. Reyes-Mendoza, N., Olivares-Contreras, R., Rodriguez-Valencia, N., **Ceh-Varela, E.** (2016). *Avances y perspectivas de la innovación, investigación y vinculación.* [Advances and perspectives of innovation, research and linkage.] Mérida, Mexico: Universidad Tecnológica Metropolitana. ISBN 978-607-96752-7-1.

6.9 Research Posters

1. Parten, C., Shakya, S.,**Ceh-Varela, E.** (2024, April) *An Edge Computing Based Elderly Fall Detection System using Wearable Devices.* In: 17th IEEE Dallas Circuits and Systems Conference (DCAS2024).
2. Stephen Washington, Kristin Waldo, David Sanchez, **Edgar Ceh-Varela** (2024, March) *Exploring the Use of Neural Networks to Enhance Undergraduate Student Retention and Completion Rates at ENMU - Portales.* Poster presented at: 2024 NMHEAR. Feb 29 - Mar 1 2024. Albuquerque, N.M.
3. Rohrbaugh, N., **Ceh-Varela, E.** *Recommending Composite Items with Graph Neural Networks.* Poster presented at: 2023 ERN Conference in STEM. February 2023, Washington, D.C.
4. **Ceh-Varela, E.**, Imhmed E., Guirao-Aguilera, M. *Discovering Water Research Topics with Natural Language Processing.* Poster presented at: 67th Annual New Mexico Water Conference. October 26-27, 2022, Las Cruces, N.M.
5. Navarro, O., **Ceh-Varela, E.**, Cao, H. *Analysis of anomaly detection algorithms on electricity consumption time series.* Poster presented at: 2020 Emerging Researchers National (ERN) Conference in STEM, February 6-8, 2020.
6. **Ceh-Varela, E.**, & Cao, H. *Multi-criteria Package Recommendations for a Group of Users.* Poster presented at: Workshop on big data challenges, techniques, and applications. April 2019, Tempe, AZ.

7 GRANTS

1. **NSF EPSCoR SEED Award**
   Project: "Tiny Vision–Language Models (VLMs) for Automated Archaeological Artifact Interpretation" (**Submitted** March 2026)
   Role: Co-PI
   Grant: 50,000.00
2. **NSF EPSCoR SURE Award**
   Project: "Expanding Research Awareness in Artificial Intelligence for Mathematical Sciences Undergraduate Students at ENMU" (**Awarded** April 2025)
   Role: Principal Investigator (PI)
   Co-PIs: Drs. Imhmed and Shakya
   Grant amount: $13,700.00
3. **ENMU Faculty Research and Instructional Development (FRID) grant (Approved, 2025).**
   Eastern New Mexico University.
   Project: "Investigating NLP-Based Clustering Techniques for Formative Feedback on Code Errors."
   Co-PI: Dr. Imhmed
   Award for the 2025-2026 academic year.
   Grant amount: $2,046.00.
4. **National Science Fundation (NSF)**
   Project: "Collaborative Research: CISE MSI: RDP: SaTC: Embracing Evolving Edge Intelligence without Privacy Concerns" (**Submitted** February 2025. Not funded.)
   Co-PI with Dr. Shakya
   Collaboration institute: Clemson University.
   Grant amount: $300,000.00
5. **The US Environmental Protection Agency (EPA) - North American Development Bank (NADB).** (**Awarded**, 2024)
   Project: "Microplastics monitoring of water in the Texas-New Mexico-Chihuahua region."
   Co-PI with Dr. Cabrales and Dr. Mitchell from the biology department.
   Grant amount: $74,910.00.
6. **ENMU Faculty Research and Instructional Development (FRID) grant (Approved, 2024).**
   Eastern New Mexico University.
   Project: "Taking Advantage of Large Language Models for Automated Testing and Feedback of Java Programming Assignments."
   Award for the 2024-2025 academic year.
   Grant amount: $5,000.00.
7. **ENMU Faculty Research and Instructional Development (FRID) grant award (Approved, 2023).**
   Eastern New Mexico University.
   Project: "Analysis of Java Code Formatting Errors for Improving Student Learning."
   Award for the 2023-2024 academic year.
   Grant amount: $4,272.00.

8 AWARDS

1. **Presidential Award for Excellence in Research, Scholarship, and Creative Activity (2026**)
   Winner.
2. **Presidential Award for Excellence in Advising (2026)**
   Finalist
3. **ENMU Blair Junior Faculty Award** (2025)
   Recognizes high-performing junior faculty who have exhibited innovative teaching and scholarship and a commitment to student success.
   Eastern New Mexico University
4. **2025 NM EPSCoR Outstanding Mentor** (2025)
   New Mexico EPSCoR. https://www.nmepscor.org/news-and-events/news/celebrating-2025-nm-epscor-mentor-award-recipients
5. **Early Career Workshop** (2025)
   New Mexico EPSCoR.
   Travel award. June 3 and 4. Albuquerque, NM.
6. **SMART Grid research award** (2023).
   New Mexico EPSCoR.
   Award for the 2023 Fall semester to continue research with my student Jacqueline Chavez.
7. **Academic Careers Workshop (ACW)** (2022).
   Center for Minorities and People with Disabilities in IT (CMD-IT) NSF.
   Travel award. June 9-12. Chicago, Ill.
8. **SMART Grid research award** (2022).
   New Mexico EPSCoR.
   Award for the 2022 Fall semester to continue research with my student Larry Maes.
9. **NMSU Outstanding Graduate Assistantship award** (2020).
   New Mexico State University.
   Award for the 2020-2021 academic year.
10. **Scholarship for studies abroad** (2017 - 2021)
    Mexico National Council of Science and Technology (CONACYT).
    54 months scholarship.
11. **Desirable profile for full-time professors at public universities** (2014 - 2017)
    Public Education Secretary of Mexico (SEP-PRODEP).

9 ADVISING AND MENTORING

9.1 Eastern New Mexico University

1. Justin Hovious. Undergraduate Student. Fall 2025. Project: Interactive Computer Vision for Real-World Human-Computer Interaction. Spring 2026. Project: Data Extraction via OCR and LLMs. Both projects with an NM AMP URS scholarship.
2. Angel Garcia-Vega. Undergraduate Student. Spring 2026. Project: Evaluating the Impact of Numerical Imputation on Distributional Integrity. Project with an NM AMP URS scholarship.
3. Miranda Lopez. Undergraduate Student. Spring 2026. Project: Evaluating the Stability of Dimensionality Reduction Techniques under Data Perturbations.
4. *George Candal.* Undergraduate Student. Fall 2025. Project: Text Embedding Performance Evaluation.
5. *Handsome Onojerame.* Undergraduate Student. Spring 2025. Project: AI and Solar Energy: Smarter Predictions for a Greener Future. [RUS scholarship]. Fall 2025. Project: One Model, Many Rivers: A Deep Learning Approach to Generalizable Water Level Forecasting. [NMWRRI Scholarship.]
6. *Devon Alonzo.* Undergraduate Student. Fall 2024. Project: Air quality forecasting in New Mexico. [RUS scholarship]
7. *David Schmith.* Undergraduate Student. Fall 2024. Projects: (i) Water Depth Level Forecasting. [NRMS 2024 Student Travel Grant], (ii) Can We Forecast River Water Levels in New Mexico's Regions?
8. *Jacqueline Chavez.* Undergraduate Student. Spring 2023, Fall 2023, Spring 2024. Projects: (i) Exploratory Data Analysis on Breast Cancer Datasets, (ii) Protecting Smart Grids with Machine Learning, (iii) Using Sentiment Analyzers to Predict Patient Drug Reviews. [RUS scholarship]
9. *Stephen Washington.* Undergraduate Student. Fall 2024. Project: Exploring the Use of Neural Networks to Enhance Undergraduate Student Retention and Completion Rates at ENMU - Portales.
10. *Drey Smith.* Undergraduate Student. Spring 2023. Project: Content-based SciFi novels recommender system.
11. *Caleb Parten.* Undergraduate Student. Summer 2025, Fall 2024, Fall 2023, Summer 2023. Projects:

(i)ESL GenAI Quiz Platform, (ii)Enhancing Code Assessment and Feedback Generation with GenAI Agents, (iii)Analysis of Java Code Formatting Errors for Improving Student Learning, (iv) Deep Learning Models for Natural Language Processing problems.

12. *Stephen Villanueva.* Undergraduate Student. Summer & Fall 2022, Spring 2023. Projects: (i) Understanding Science Fiction: A topic modeling approach, (ii) Analyzing the Golden Age of Science Fiction: A Topic Modeling Approach, (iii) Optimizing Document Clustering in NLP with Embedding and Cluster Methods [RUS scholarship]
13. *Larry Maes.* Undergraduate Student. Fall 2022. Project: Machine Learning Algorithms for Identifying the Major Diabetes Risk Factors.
14. *Thomas Wight.* Undergraduate student. Spring 2022. Project: Understanding Science Fiction using Machine Learning and Natural Language Processing. Outcome: Poster in 2022 ENMU Student Research and Creativity Conference (SRCC). My student received the Undergraduate Research Scholarship from NM Alliance for Minority Participation. [RUS Scholarship]
15. *Angel Alamilla.* Undergraduate student. Spring 2022 - present. Thesis Co-director. Universidad Veracruzana, Mexico.
16. *Naomi Rohrbaugh.* Undergraduate student. Summer 2021. Outcome: project report for the NMSU REU program. My student received the NMSU REU scholarship and our work was accepted at the 2022 Emerging Researchers National (ERN) Conference in STEM.

9.2 New Mexico State University

1. Jiefei Liu. Undergraduate student. Spring 2020. Outcome: undergraduate senior Thesis.
2. Omar Navarro. Undergraduate student. Fall 2019. Outcome: poster presented.
3. Ramin Zahedi. Master's student. Fall 2019. Outcome: paper published
4. Panika Valecha. Master's student. Fall 2018. Outcome: Masters' Project report.
5. Amy Worth. Undergraduate student. Summer 2018. Outcome: project report for the REU program.
6. Tangee Beverly. Undergraduate student. Summer 2018. Outcome: project report for the REU program.
7. Jacob Valdez. Master's student. Spring 2018. Outcome: Masters' Project report.

9.3 Metropolitan Technological University

Students mentored on final projects to obtain their **undergraduate** degree.

1. Erik Tut Us (09/2016-12/2016)
2. Abigail Victoria Granados (01/2015-04/2015)
3. Jhonatan Chan Escalante (01/2015-04/2015)
4. Natan Colli Chel (09/2014-12/2014)
5. Amy Quijano Chac (09/2014-12/2014)
6. Emmanuel Romero Garcia (09/2014-12/2014)
7. Gerardo Romero Pacheco (09/2014-12/2014)
8. Jesus Alberto Vazquez Navarrete (01/2014-04/2014)
9. Jordan Alexis Avila Caballero (01/2014-04/2014)
10. Genesis Antonio Aguilar Uc (05/2013-08/2013)
11. Edi Alberto Santiago Interian (01/2013-04/2013)
12. Melchor Alfredo Couoh Contreras (01/2013-04/2013)
13. Paul Alejandro Sosa Angulo (01/2013-04/2013)

9.4 Juarez Autonomous University of Tabasco

XII Verano de Investigación Científica UJAT [XII UJAT Scientific Research Summer]

1. Yudith Suguey Potenciano Aguilar. *Uso de aplicaciones móviles por estudiantes de gastronomía, un estudio comparativo* [Usage of mobile applications by gastronomy students, a comparative study]. (06/2016-08/2016)

10 SERVICE

10.1 University

1. *HLC QI Syllabus Work group.* Member representing the Computer Science program. Fall 2025.
2. *HLC Greyhound Connection.* Member representing the Computer Science program. Fall 2025.

3. *ENMU Website.* Member of the AdHoc committee for reviewing RFPs for the new University website. Spring 2025.
4. *Faculty Senate.* Member of the ENMU Faculty Senate representing the Department of Mathematical Sciences. Since Fall 2022. (Second two-years appointment).
5. *ENMU AI Taskforce.* Member of the ENMU AI Taskforce representing the College of Liberal Arts and Sciences. Since Fall 2023.
   Coordinator for the *AI Research and Development* subcommittee.
6. *ENMU Diversity, Equality, and Inclusion Taskforce.* Member of the ENMU DEI taskforce representing the College of Liberal Arts and Sciences. Since Spring 2023.
7. *Research Undergraduate Scholars (URS).* NM AMP. Member since 2024

10.2 Department

1. *New Mexico Alliance for Minority Participation (NM AMP).* Scholarship committee evaluator since 2024.
2. *CS Program Assessment.* Coordinate the Computer Science program assessment. Since Fall 2023.
3. *Scholarships Committee.* Undergraduate scholarships committee for the Mathematical Sciences Department.
   Chair in Spring 2025.
   Co-chair in Spring 2024.
   Member since Spring 2022.
4. *Advisor.* Computer Science Club. Since Fall 2021.

10.3 Committees

1. *Thesis Committee.* Department of Anthropology and Applied Archaeology. Thesis:AI-Assisted Normalization of Historical Hangul: Human-Centered Workflows in Digital Cultural Heritage. Student: Emily Cole. Master of Arts.
2. *Search Committee.* Co-chair for hire of Assistant Professor of Chemistry for the Chemistry Department, ENMU, 2025.
3. *Program Committee Member.* IEEE International Conference on Big Data (2024, 2025).
4. *Search Committee.* Member for hire of Assistant Professor of Computer Science for the Mathematical Sciences Department, ENMU, 2022.
5. *Program Committee Member.* 31st ACM International Conference on Information and Knowledge Management (CIKM). Since 2022.

10.4 External reviewer

1. ACM Special Interest Group on Information Retrieval (SIGIR). 2026.
2. *Applied Sciences* Journal. MDPI. Since 2024
3. *Machine Learning and Cybernetics* Journal. Springer Nature. January 2024.
4. *Neural Computing and Applications* Journal. Springer. 2023, 2024.
5. *3rd International Conference on Electrical, Computer, Communications and Mechatronics Engineering*, ICECCME 2023, Tenerife, Canary Islands, Spain. July, 19-20, 2023.
6. *31st ACM International Conference on Information and Knowledge Management.* Atlanta, GA., USA., October 17-22, 2022.
7. *IEEE International Conference on Electrical, Computer, and Energy Technologies*, ICECET'22, Prage, Czech Republic, July 20-22, 2022.
8. *Applied Clinical Informatics Journal,* International Medical Informatics Association (IMIA) and American Medical Informatics Association (AMIA), 2021.
9. *IEEE International Conference on Electrical, Computer, and Energy Technologies*, ICECET'21, Virtual Event, Cape Town, South Africa, December 9-10, 2021.
10. *Advances in Science, Technology and Engineering Systems Journal*, ASTESJ, August, 2021, ISSN:2415-6698.
11. *29th ACM International Conference on Information and Knowledge Management*, CIKM 2020, Virtual Event, Ireland, October 19-23, 2020.
12. *Database Systems for Advanced Applications: 24th International Conference*, DASFAA 2019, Chiang Mai, Thailand, April 22–25, 2019.
13. *UADY Engineering School Academic Magazine.* Autonomous University of Yucatan (UADY). ISSN: 2448-8364. (2018, 2019).
14. *Databases Theory and Applications: 28th Australasian Database Conference, ADC 2017*, Brisbane, QLD, Australia, September 25–28, 2017,

15. *Symposium "Procesamiento de Señales e imágenes Biomédicas"* [Symposium "Biomedical Signal and Image Processing]. XXXIX National Congress on Biomedic Engineering. 25-28 September 2016. Mérida, Yucatán.
16. *Coloquio de Investigación Multidisciplinaria* [Colloquium on Multidisciplinary Research] CIM-ORIZABA 2016.

10.5 Technical committee member

1. *Guest Editor.* Special Issue "Machine Leaning and Natural Language Processing." Future Internet Journal. MDPI. ISSN 1999-5903, https://www.mdpi.com/journal/futureinternet. 2025.
2. *Co-chair.* Data Driven Software Engineering (DISE) special track at SIMBig 2023 and 2024 conferences.
3. *Moderator and Judge.* ENMU Student Research and Creativity Conference (SRCC). April 2022,2023.
4. *Organizer.* Data Analytics Competition. Computing Alliance of Hispanic-Serving Institutions (CAHSI) annual conference, co-located with GMiS, September, 30th and October, 1st, 2020, Virtual.
5. *Organizer.* Workshop on Big Data Applications, Challenges, and Techniques. New Mexico State University, November 22, 2019. https://kddlab.nmsu.edu/workshop/

10.6 Service to the community

1. *Judge.* 2025 New Mexico Research Symposium. Albuquerque, NM. https://www.nmepscor.org/
2. *Judge.* Annual Supercomputing Challenge. 2024, 2025. https://supercomputingchallenge.org/
3. *Mentor.* Girls Who Code club. Grades 3 to 5. Eastern New Mexico University (ENMU). Since Fall 2022.
4. *Panelist.* New Mexico State University REU program. Summer 2022.
5. *Guest Speaker.* "Getting Started with Recommender Systems". Computer Science Club, ENMU. January 27, 2022.
6. *Mentor.* BIGDatA Research Experience for Undergraduates (REU) program. New Mexico State University (NMSU). Summer, 2021, 2022, 2023.
7. *Colaborator.* Estrategia Digital Yucatan [Yucatan Digital Strategy]. Yucatan State Government. December, 2015.
8. *Co-Organizer.* II Congreso Virtual Internacional de Innovacion, Vinculacion y Educacion Superior. [II International Virtual Congress on Innovation, Linkage and Higher Education.] 2016.
9. *Co-Organizer.* I Congreso Virtual Internacional de Innovacion, Vinculaion y Educacion Superior. [I International Virtual Congress on Innovation, Linkage and Higher Education.] 2016.

11 OUTREACH

1. **Presentation** (3/2026) *La IA en la enseñanza del inglés como segunda lengua (ESL/EFL): Análisis del panorama actual e identificación de las necesidades pedagógicas (AI in ESL/EFL Education: Mapping the Landscape and Identifying the Pedagogical Gap).* The 60th Southwest Council of Latin American Studies (SCOLAS) conference. Mexico.

2. **Presentation** (2/2026) *Graph Neural Networks for Molecular Data (An ML Perspective on Representation and Learning).* ENMU Chemistry club. Portales, NM, USA.

3. **Online Presentation** (10/2025) *Reduciendo Alucinaciones en Agentes AI con RAG. [Reducing Hallucinations in AI Agents with RAG]* . The Latin American School of Artificial Intelligence. Peru.

4. **Presentation** (3/2025) *Automatización de las preguntas de comprensión para mejorar el aprendizaje de idiomas.* Panel: Explorando el uso de Inteligencia Artificial para el desarrollo de habilidades de comprensión lectora en el aprendizaje de idiomas. The Southwest Council of Latin American Studies (SCOLAS) 2025. Albuquerque, NM, USA.

5. **Online Presentation** (10/2024) *Límites de Zero-shot Learning en análisis de sentimientos.* Universidad Peruana de Ciencias Aplicadas. Peru.

6. **Online Presentation** (06/2024) *El secretro detrás del (nuevo) éxito del Natual Language Processing (NLP).* Universidad Tecnológica Metropolitana. México.

7. **Academic Panel participant** (04/2023) 46th Jack Williamson Lectureship. ENMU. https://youtu.be/bDiVNswvfKY

8. **Online Presentation** (03/2023) *"Representing Texts with Graphs"*, Universidad Veracruzana, México.

9. **Presentation** (09/2022) *"The world is a puzzle and we need more women to solve it!*, Extension Association of New Mexico. Chapter Portales.

10. **Online Presentation** (03/2022) *"Grafos y Sistemas de Recomendación (Graph Recommender Systems)"*, Instituto Tecnológico de Tizimin, México.

11. **Online Presentation** (11/2021) *"Sistemas de recomendación en la industria."* ["Recommender Systems in the industry."], Universidad Veracruzana, México.

12. **Online Presentation** (09/2021)
"Grafos y Sistemas de Recommendacion." ["Graphs and Recommender Systems."], Metropolitan Technological University & Puebla Technological University, México.

13. **Online Presentation** (05/2020)
"Construyendo sistemas de recomendación básicos con estadísticas simples." ["Building basic recommender systems with simple statictics."], Metropolitan Technological University, Mérida, Yucatán, México.

14. **HITLabs** (05/2013 - 09/2016)
Metropolitan Technological University
Co-Founded an IT research lab where students and professors participated in different technological projects. Conducted and advised research projects with industry and government institutions.

15. **Research project** (08/2014)
"La sociedad Yucateca y las TICs: Un estudio de perspectivas." ["Yucatecan society and ICTs: A perspective study."]
Metropolitan Technological University, Yucatan State Government, and CANIETI.

16. **Workshop** (04/2013)
"Conociendo la inSeguridad de las Redes WiFi (WLAN)." ["Knowing the inSecurity of WiFi networks (WLAN)."], ExpoTIC 2013, Mérida, Yucatán, México.

12 PROFESSIONAL CERTIFICATIONS

12.1 **CompTIA** ID: COMP001002735353

1. CompTIA Network+
2. CompTIA Security+

12.2 **Microsoft** ID: 3248905

1. Microsoft Certified Solutions Associate: Windows Server 2008
Certification Number: D714-4552
2. Microsoft Certified Professional: Microsoft Certified Professional
Certification Number: E902-8291
3. Microsoft Certified Professional: Enterprise Administrator on Windows Server 2008
Certification Number: C275-8255
4. Microsoft Certified Technology Specialist: Windows Server 2008 Network Infrastructure, Configuration
Certification Number: C275-8253
5. Microsoft Certified Technology Specialist: Windows Server 2008 Active Directory, Configuration
Certification Number: C275-8252
6. Microsoft Certified Technology Specialist: Windows Server 2008 Applications Infrastructure, Configuration
Certification Number: C275-8254

12.3 Past certifications

1. **Microsoft**
Microsoft Certified Trainer, MCT (2008 - 2018)
Microsoft Certified Systems Engineer: Security on Windows Server 2003. (C.N.: A478-2780)
2. **Cisco**
ID: CSCO11018765
Cisco Certified Network Associate (CCNA) (2008-2010)

3. **Citrix**
   ID: CTX213197
   Citrix Certified Administrator (CCA) (2006-2008)

13 COPYRIGHTS

13.1 Source code

1. *Sistema web de seguimiento a rehabilitación médica.* [Web system for monitoring medical rehabilitation]. Instituto Nacional del Derecho de Autor (INDAUTOR). 2016. Mérida, Yucatén, México.

2. *Sistema móvil de medición fisioterapéutica.* [Mobile physiotherapeutic measurement system]. Instituto Nacional del Derecho de Autor (INDAUTOR). 2016. Mérida, Yucatén, México.

14 OTHER CERTIFICATES

14.1 Academic

1. Diploma in *Evaluación del desempeño en modelos de educación basada en competencias* [Performance Evaluation in Models of Competency-Based Education]
   Monterrey Institute of Technology and Higher Education (ITESM), 12/2013.

14.2 Technical

1. Master LangGraph v1 and Ollama - Build Gen AI Agents. Udemy, 12/2025.
2. Databricks Accredited Generative AI Fundamentals. Databricks Academy, 06/2025.
3. Introduction to LangGraph. LangChain Academy, 06/2025.
4. Introduction to Transfer Learning. Great Learning Academy, 12/2024.
5. Introduction to Neural Network. Great Learning Academy, 12/2024.
6. OpenCV BootCamp. OpenCV University. 08/2024.
7. Intro to AI Ethics. Kaggle, 01/2024.
8. Machine Learning Model Deployment using Flask. Great Learning Academy, 01/2024.
9. Python for Data Science. Great Learning Academy, 12/2023.
10. Intro to Deep Learning. Kaggle, 05/2023
11. Machine Learning Explainability. Kaggle, 05/2023
12. Intermediate Machine Learning. Kaggle, 08/2022
13. Intro to Machine Learning. Kaggle, 07/2022
14. Python Fundamentals for Beginners. Great Learning Academy, 01/2022.
15. Machine Learning with Spark. handytec Academy, 10/2020.
16. Julia Programming for Data Science & Machine Learning. Udemy, 06/2020.
17. Deep Learning: Advanced NLP and RNNs. Udemy, 04/2020.
18. Deep Learning de A a Z: redes neuronales en Pytjon desde cero. Udemy, 04/2020.
19. Big Data Analytics with Apache Spark and Python. Udemy, 06/2016.
20. Applied Data Science with R. Udemy, 05/2016.
21. Course Certificate for Machine Learning: Regression. Coursera, 04/2016.
22. Course Certificate for Machine Learning Foundations: A Case Study Approach. Coursera, 03/2016.
23. Course Certificate for Machine Learning: Classification. Coursera, 02/2016.
24. Data Science A-Z™: Real-Life Data Science Exercises Included. Udemy, 11/2015.
25. Learning Python for Data Analysis and Visualization. Udemy, 09/2015.

15 PRESS RELEASES

1. Meet the Researcher - NM WRRI (2026)
2. WHERE CODE TAKES ROOT - ENMU
3. Celebrating the 2025 NM EPSCoR Mentor Award Recipients - EPSCoR
4. RIO-NM Names SURE Awardees and Releases RFP for Fall - EPSCoR
5. 2023 NM SMART Grid Students Share Their Externship Experiences - EPSCoR
6. ENMU Student Hopes to Strengthen Cyber Security
7. Expert Advise - TechGuide