

Juan Ignacio Gonzalez-Espinosa¹

Assistant Professor. *School for Professional Studies*

Saint Louis University.

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EDUCATION

- August 2023 – January 2024** **Generative AI for Natural Language Processing Program.** Great Learning.
Verified certificate: <https://verify.mygreatlearning.com/verify/BYPROKQI>
- April 2023- August 2023** **Post-graduate program: Data Science and Machine Learning: Making Data-driven Decisions.** MIT (Massachusetts Institute of Technology) and the Institute for Data, Systems, and Society (IDSS)-Great Learning. Verified certificate: <https://verify.mygreatlearning.com/EHJYPPFX>
- August 2022 – May-2023** **Post-Graduate Program in Artificial Intelligence & ML.** The University of Texas at Austin. McCombs School of Business-Great Learning.
Verified certificate: <https://vrfy.digital/RrLyB>
- May 2021 – December 2021** **Post-Graduate Program in Data Science and Business Analytics.** The University of Texas at Austin. McCombs School of Business-Great Learning.
Verified certificate: <https://vrfy.digital/yJJCx>
- 2016** **PhD. Management Science. EGADE Business School Monterrey. Instituto Tecnológico y de Estudios Superiores de Monterrey (ITESM)**
Thesis: "Emerging Country International Firms and Construction of Organizational Advantages for Internationalization: The Case of Mexico."
Supervisor: Dra. Laura Zapata, Associated Dean, EGADE Business School. Monterrey. (<https://egade.tec.mx/en/node/234>)
- January 2012 – July 2012** **Research Stay and Specialization in International Strategy and Quantitative Methods (SEM).** Fisher College of Business. Ohio State University. Columbus, Ohio, US.
Supervisor: Dr. Stephen Hills. Fisher College of Business. (<https://easc.osu.edu/people/hills.1>)

¹ Legal resident with a work permit under an H1B visa, valid until 2027.

2007	Master of Business Administration (MBA). EGADE Business School Monterrey. Instituto Tecnológico y de Estudios Superiores de Monterrey (ITESM)
1998	B.A. Marketing. Instituto Tecnológico y de Estudios Superiores de Monterrey (ITESM) Monterrey Campus. Graduated with honors (Mention of Excellence)

ACADEMIC POSITIONS

December 2023-Present	Full-time Assistant Professor at Saint Louis University , School for Professional Studies, affiliated with the M.S. in Analytics Program. Responsibilities include lecturing, student advising and orientation, and course design/redesign.
January 2018-November 2023	Professor (Assistant). Universidad de Monterrey (UEM). <i>Engineering and Technology School and Business School.</i>
2017	Full-Time Professor. Instituto Tecnológico y de Estudios Superiores de Monterrey (ITESM), Sonora Norte (Hermosillo, Sonora) Campus. Business School. Hermosillo, Sonora. México.
2012	Full-Time Professor. Instituto Tecnológico y de Estudios Superiores de Monterrey (ITESM) Guadalajara Campus. Affiliated to the Business School, Guadalajara, Jalisco. Mexico.

See annex no. 1 for a specific list of courses offered at full professorship.

See annex no. 2 for the recent teaching evaluations available.

ACADEMIC ADMINISTRATIVE EXPERIENCE

January to November 2023	<p><i>Director of Intelligence and Data Science. Universidad de Monterrey (UEM).</i> San Pedro Garza García, Nuevo León México. Affiliated with the Vice-Rector's Office of Strategic Evolution.</p> <ul style="list-style-type: none"> - I planned, developed, and deployed (in collaboration with the Data Science team) a series of ML&DL based models to support decision-making on Retention and Student Success. (See annex no. 2 for detailed diagrams describing these models and their deployment.) - I designed and implemented a Data Governance initiative to manage the data that will feed ML models for Retention and Student Success. I am responsible for the overall Student Data Governance project for the University, starting in 2024. - I developed a comprehensive segmentation exercise for alumni, focused on recognizing specific profiles and Alumni donor development. - I consistently supported and promoted data-driven culture and digital transformation projects throughout the University. This was achieved by organizing and offering conferences, live demonstrations, and specialized training sessions in collaboration with other leaders from the Vice-Rector's Office of Strategic Transformation.
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Please see Annex No. 3 for a brief description of the ML Student Retention and Student Success models that have been developed. Refer to Annex No. 4 for specifications of their hardware and software architecture, deployment, and production release.

July 2022-Jan-2023 ***Chief Data Scientist. Universidad de Monterrey (UEM).*** San Pedro Garza García, Nuevo León México. Affiliated with the Vice-Rector's Office of Strategic Transformation.

- I assessed the University's data and analytical capabilities, pinpointing opportunities to improve the organization of institutional information, determining priorities for using available data, and proposing a team to work in the University's data science initiatives.

2018-2019 ***Academic Coordinator.*** Certification in Analytics and Big Data offered by the Extension Studies and Engineering and Technology School. **Universidad de Monterrey (UEM)** San Pedro Garza García, Nuevo León México.

- I created the academic content for certification—more than 130 participants in ten cohorts.

2017 ***Business School Director. Instituto Tecnológico y de Estudios Superiores de Monterrey (ITESM) Sonora Norte (Hermosillo, Sonora) Campus.*** Hermosillo, Sonora. Mexico. Responsible for five undergraduate academic programs (International Business, Marketing, Management and Entrepreneurship), accounting for 456 students, five full-time, thirty-four part-time teachers and five program coordinators reported to me.

CONSULTING AND TRAINING PROJECTS

2022-2023 ***METALSA. Tier 1 Automotive Solutions Provider.***
Execution of a prospective simulation study (based on Systems Dynamics and strategic foresight) for estimating the evolution of business and business and financial models for autonomous vehicles in Mexico and Latin America. *Funded project:* 44,000 USD for three years.

Feb 2022 ***UEM. Data Science and Analytics. Business Applications.***
Course offered to the faculty of the School of Business. Universidad de Monterrey (8 hours).

Jan-May 2022 ***UEM. Advanced data analysis using SPSS.***
Course offered to the faculty of the Psychology Department. Health Sciences School. Universidad de Monterrey (14 hours).

July 2021 ***DeAcero. A leading Steel producer in Mexico.***
Internal training in Data Science and Predictive Analytics using R and R Studio. (16 Hours)

July 2021 ***VIDUSA. Leader in the residential housing construction sector.***
Internal training in Data Visualization and Analytics using Qlik Sense. (16 hours)

March 2019 ***HEB México. Headquarters.***
Internal training offered in Data Science and Predictive Analytics, using Rapid Miner. (21 hours). A team of IT, Strategic Decision making, and Online Marketing were trained.

Feb 2019 ***PSW Global - CüSA.***
Internal training was offered to the Data Science team, including Predictive modeling and presentations of Business Cases. (15 hours)

PROFESSIONAL (INDUSTRY) EXPERIENCE

See annex five for a broader description of industry positions performed between 2001 and 2016.

RESEARCH INTERESTS

My research focuses on the non-traditional sources of competitiveness, especially those at the crossroads of socio-technical systems and Artificial Intelligence:

- *Generative AI, Machine and Deep Learning and decision making.* Use of predictive and prescriptive analytics techniques, and Gen AI applications to enhance decision-making and improve the firm's competitive position.
- *Complexity Theory and Systems Dynamics.*
- *Competitive Intelligence.* Design and Implementation of Competitive Intelligence systems (competitive analysis, internal and external threats, opportunities, innovative technologies, and emerging markets)
- *Market and Intelligence Research:* Multivariate techniques, Service quality studies, cluster and factor analysis, SEM, and Conjoint studies.
- *Intra and Entrepreneurship,* specifically non-traditional entrepreneurs.

GRANTS AND ACADEMIC AWARDS

- 2021** **IEOM (Industrial Engineering and Operations Management) Conference. 6th North American Conference, Nov 2021.** Recognition and appreciation of Outstanding Contributions to Innovation and Entrepreneurship and Service to the IEOM.
- 2019** **PUENTES Program.** Visiting Scholar at The Center for the United States and Mexico. Rice University's Baker Institute for Public Policy. July 2019. Grant received: USD 5,000. See: <https://www.bakerinstitute.org/visiting-scholars-center-united-states-and-mexico>
- 2018** **Erasmus + program.** I was selected as an academic from Mexico nationwide. Academic exchange pursuing UDEM relations with SUT (Silesian University of Technology) for academic and research projects. Developed at the Silesian University of Technology, Gliwice, Poland. Lecturer at Business School. Grant received: USD 2,200. May 2018.

- 2012** **Winner of the Marco-Polo/China Government Scholarship (Funded by China Construction Bank and Santander Universidades).** For a research stay at Peking University. China.
- 2011** **Fulbright- COMEXUS. Award-Winner for Mexico** for a research specialization stay during Ph.D. studies at a US University.
- 2009** **Winner of the CONACYT (National Council of Science and Technology Mexico) and ITESM (Instituto Tecnológico y de Estudios Superiores de Monterrey) full scholarship** for Doctoral Studies.
- 2004** **Winner of the CONACYT (National Council of Science and Technology Mexico) and ITESM (Instituto Tecnológico y de Estudios Superiores de Monterrey) part-time scholarship for MBA Studies.**
- 1998** **Winner of the Mention of Excellence. Graduating Class of 1998. Undergraduate Studies.** BA. Marketing. *Instituto Tecnológico y de Estudios Superiores de Monterrey (ITESM) Monterrey Campus.*
- 1996** **Winner of the Carlos Slim/Telmex Foundation Scholarship.**
- 1993** **Winner of the ITESM (Instituto Tecnológico y de Estudios Superiores de Monterrey) full scholarship for Undergraduate Studies.**

RESEARCH EXPERIENCE

- Jan 2009 –** **Research group Assistant. International Competitiveness Research Group. EGADE**
Dec 2011 **Business School. San Pedro Garza García, Nuevo León, México.**
- Implementation of research focused on recognizing key characteristics of Mexican international firms succeeding in their international ventures.

PUBLICATIONS

Work in Progress:

Gonzalez-Espinosa, J. (2022). Immigrant Entrepreneurship. Characteristics and Success Factors. A case study in the Houston Metropolitan Area. *APPROACH*: Upon case analysis, a descriptive profile of a wide range (legal and illegal) groups of 13 Mexican immigrant entrepreneurs living and operating in the Houston metropolitan area was done. The paper describes their evolutionary paths, how they created and raised successful businesses, their learning processes, and sources of competitiveness. Some additional issues about ethnic centrality and embeddedness were discovered. Summary available on:
<https://docs.google.com/presentation/d/114oy7VNmzKXAYvxWRMxRty0PDuQ2rjB2/edit?usp=sharing&ouid=107178399468150134643&rtfpof=true&sd=true>

- Gonzalez-Espinosa, J. (2021). How Restrictive Conditions require developing Marketing Decisions Using Analytics and Predictive Modeling. A Description of Two Cases. In De la Peña, A. and Amezcua, B. (Eds.). *Marketing by Contingency*. Warrenton, NJ: Apple Academic Press. ISBN: 9781774911051.
- Garza-Gutiérrez, D., Gonzalez-Espinosa, J. I. & Valdéz de la Rosa, L. M. (2019, July). Applicable models of customer analytics for a retail company in México. Paper presented at the **International Conference on Industrial Engineering and Operations Management**.
<https://www.scopus.com/record/display.uri?eid=2-s2.0-85079504332&origin=inward&txGid=ab6dbe3ac2b386421dafb5f41e1ae4b7>
- Gonzalez-Espinosa, J. (2019). *SKU-Based Forecasting National Sales for an Agricultural Manufacturing Company*. In Proceedings of the **2019 IISE Annual Conference. Institute for Industrial and Systems Engineering Annual Conference and Expo**, May 18-21, Orlando, FL. ISBN: 978-1-7138-1409-2
- Gonzalez-Espinosa, J. (2019, May). *A Predictive Model for Risk Security Manufacturing Plant in Mexico*. Poster session presented at the **2019 IISE Annual Conference. Institute for Industrial and Systems Engineering Annual Conference and Expo**, May 18-21, Orlando, FL.
- Tamez-Silva, C. Y, Sepúlveda-Gonzalez, A. P., Flores-Madariaga, M. & Gonzalez-Espinosa, J. (2019, October). *Implementation of Analytics Procedures to Predict Stock-Outs in store for a retailer. A case in Mexico*. **Proceedings of the Fourth North American International Conference on Industrial Engineering and Operations Management (IEOM)**, Toronto, Canada. October 23-25, 2019. Available at: <http://ieomsociety.org/toronto2019/papers/156.pdf>²
- Gutiérrez, D. G., & Gonzalez-Espinosa, J. (2018). *Implementation of applicable models of Customer Analytics for a Retail Company in Mexico*. In Proceedings of the **International Conference on Industrial Engineering and Operations Management** (SEP ed., Vol. 2018, pp. 1359-1360). Available at: <https://www.scopus.com/record/display.uri?eid=2-s2.0-85067081038&origin=inward&txGid=4fb5c25c77c8b379feb718bc7462ab6c>
- Gonzalez-Espinosa, J. (2010). *Multinationals of Emerging Economies: A theoretical perspective about competitive Advantages*. In Castaño, R., Camacho, G. and Madero, S. 24th. Paper presented in the **International Congress of Research in Management Science Proceedings (ACACIA, Mexican Academy of Management Science)**. Monterrey, Nuevo León, México. ISBN: 978-607-501-009-0. 2010.
- Gonzalez-Espinosa, J. (2009). *Competitive Intelligence System Model*. In Cantú, F. J and Duron. Paper presented at the **40th Congress of Research and Development: Technological Entrepreneurship Proceedings (p. 320)**. ITESM Campus Monterrey. Monterrey, Nuevo León. México. ISBN: 978-607-501-0007. Available (in Spanish).
- Gonzalez-Espinosa, J. and Martinez-Chimal, I. (2009). *Herzberg's motivation Theories. Commensurability and Utility*. In Cantú, F. J and Duron. Paper presented at the **40th Congress of Research and Development: Technological Entrepreneurship Proceedings (p. 323)**. ITESM Campus Monterrey. Monterrey, Nuevo León. México. ISBN: 978-607-501-0007. Available (in Spanish).

² This paper was awarded first place in Undergraduate Paper Competition at the same conference.

CONFERENCES, PRESENTATIONS AND OTHER PARTICIPATIONS

- ***Data. Issues & Opportunities for Higher Education.*** Conference offered at the Holon IQ Future of Higher Education & Workforce Summit. Monterrey, México. Sep. 20-21, 2023. (See: <https://www.holoniq.com/holoniq-2023-future-of-higher-education-and-workforce-summit-monterrey-20-21-september-2023>)
- ***ChatGPT. What is and what is not?*** Conference offered to the academic community of Monterrey and the metropolitan area. March 28th, 2023. 6 hours.
- ***What is ChatGPT?*** The conference was offered to academics at UDEM—on March 10th, 2023. 3 hours.
- ***Roadmap to Digital Transformation. A pathway.*** The conference was offered to the members of Nuevo León 4.0 (<https://www.nuevoleon40.org/>)—on March 8th, 2022.
- ***AI, ML and DL in the firm.*** Conference offered to the members of the Automotive Industrial Cluster (Cluster Automotriz de Nuevo León, CLAUT): on February 25th, 2022.
- ***Responsible use of personal data in the digital age: protection to the individual and the intelligent use of data for businesses.*** Workshop offered at the Jorge L. Garza Chair of Entrepreneurship and Innovation: on October 7th, 2021.
- ***International Marketing.*** Intensive course (online) offered to undergraduate students at Universidad Privada del Norte, School of Business, as part of the International Teacher Leading Program (ITLP). Lima, Trujillo y Cajamarca, Peru. August 2nd to the 8th, 2021.
- ***Data: Discordance between expectation and reality. How legitimate is it to use data analysis to induce consumer behavior?*** Discussion panel performed with Dr. José Zárate O. 2nd Workshop "Ethics and Technology. Perspectives from Industry 4.0. Universidad de Monterrey (UEM). November 26th, 2020. Program available (in Spanish): <https://www.udem.edu.mx/sites/default/files/2020-11/Programa-2do-Workshop-Tecnologia-etica-perspectivas-en-la-Industria-4.0.pdf>.
- ***Big Data Analytics for decision making.*** Specialized course for postgraduates of the Engineering School. Pontificia Universidad Católica del Perú. Lima, Perú, October 26th and 27th, 2019.
- ***Data Science from the University Perspective.*** Conference on Learning at Work Workshop. Softtek. October 11th, 2018.
- ***Quality 4.0. Perspectives from Industry 4.0.*** Participation at the Annual Conference of Big Data and Analytics. Viakable. December 13th, 2018.

MASTER AND Ph.D. DISSERTATION COMMITTEES

Master Theses directed.

Master in Product Engineering. Engineering and Technology School. UDEM:

- *Reduction of New Products Cost Parameters Gap between Development and Introduction Stages: A VSM Approach.* Mariana Martínez. May 2020.

Master of Engineering Management. Engineering and Technology School. UDEM:

- *Prediction and prevention of personnel turnover employing predictive models. The case of a manufacturing firm in Northern Mexico.* Gerardo Frutos Solís. April 2020.

- *Predictive modeling for analyzing student dropouts from the School of Engineering and Technology at the University of Monterrey. Guillermo Verástegui López. April 2020.*

Ph.D. Committees

Doctor of Philosophy in Management Program. The Autonomous University of Nuevo Leon. School of Accounting and Business.

- Ph.D. Thesis: *Factors Influencing the Business Growth of Small Enterprises in Metropolitan Lima, Peru.* Henry Alberto Navarro Chávez. Member of the Committee, July 2023.
- Ph.D. Thesis: *Organizational capabilities that drive the internationalization of SMEs in the software industry, Case of Nuevo Leon, Mexico.* Héctor Emilio Gómez de la Paz. Member of the Committee.

UNIVERSITY SERVICE

- Advisor of the Engineering Management academic student's group during four continuing periods (2018 to 2022).
- Track Chair: Entrepreneurship and Innovation. 6th North American Industrial Engineering and Operations Management Conference. Monterrey, México. November 3rd to 5th, 2021. (<http://www.ieomsociety.org/monterrey2020/committee/>)
- Member of the Committee in charge of designing and implementing the new teacher's university evaluation system. 2020.
- Editor, Proceedings Book. APROS 13th Asia Pacific Researchers in Organization Studies. December 2009.
- Leader. Welcome Committee. APROS 13th Asia Pacific Researchers in Organization Studies. December 2009.

COURSES AND CERTIFICATIONS

- **Certification:** Agile Coach Professional. Enevasys. December 2023.
- **Certification:** *Data Governance: A Practical Guide.* Global Data Academy. October 2022.
- **Certified in Computer Vision Master's Program.** Analytics Vidhya (December 2021). This certification requires accrediting the following courses:
 - *Python for Business Analytics and Data Science.* Verified certificate: <https://courses.analyticsvidhya.com/certificates/pdhmcwktpy>
 - *Fundamentals of Deep Learning.* Verified certificate: <https://courses.analyticsvidhya.com/certificates/cwf83bulya>
 - *Machine Learning for Deep Learning.* Verified certificate: <https://courses.analyticsvidhya.com/certificates/ltpeotlyfu>
 - *Applied Computer Vision using Deep Learning.* Verified certificate: <https://courses.analyticsvidhya.com/certificates/lgntyf8vxx>
- **ShiftUp Business Agility and Innovation Leader Certification.** ShiftUp. (ShiftUp.work). August 2020.
- **Design of a University course based on Project-Oriented Learning.** UDEM, July 2020.
- **The New Role of the Educator: Best Practices in Online Education.** Santander-Instituto de Empresa Foundation. May 2020.

PROFESSIONAL AFFILIATIONS

- Member of ASEM (Mexican Association of Entrepreneurs), 2018.
- Member of MODTECH (Modern Technologies in Industrial Engineering) Mexico Branch. 2019. See: https://modtech.ro/professional-association/Mexico_Branch.php#gsc.tab=0

RESEARCH, PROGRAMMING AND ML/IA/ANALYTICS SKILLS

- *Qualitative perspective*: Case Study Analysis. Focus Group analysis, In-deep interviews. Social Network Analysis. Sentiment analysis, Text Mining and Systematic Literature review. Tools: NVivo, R, Python.
- *Quantitative perspective*: Questionnaire and item design. Use and deployment of fundamental univariate and multivariate techniques: MANOVA, Cluster analysis, regressive models (linear, logistic, multinomial, discriminant, tree-based), factor analysis, multidimensional scaling, decision trees, and correspondence analysis. Non-parametric techniques. Time-series analysis and forecasting. Structural Equation Modeling (SEM) and Partial Least Squares (PLS). Social Network Analysis. System Dynamics: Vensim PL.
- *ML (Machine Learning) & Analytics*: application and deployment of data wrangling, descriptive, predictive, and prescriptive algorithms. Supervised and unsupervised modeling. Data visualization. Programming languages and visualization for Analytics: SQL (essential), SPSS, R and Python (functional coding ability), RapidMiner, Orange. Qlik Sense, Tableau, PowerBI.
- *Advanced ML Techniques*: ensemble models, feature engineering, model tuning.
- *Deep Learning*: Artificial Neural Networks (MLP/Multi-layer perceptron, CNN/Convolutional and RNN/Recurrent Neural Networks) on Keras and PyTorch.
- *NLP (Natural Language Processing)*: RNN/Recurrent and LSTM Neural Networks, text vectorization (Bag of Words, TF-IDF); Sentiment Analysis (Textblob and VADER); architectures (Word2vec: CBOW and Skip Gram).
- *Large Language Models (MML)*: LangChain.
- *Recommendation systems*: Collaborative filtering, clustering, matrix factorization (SVD) content and hybrid-based systems.
- *Generative AI models*: Prompt Engineering, Conversational AI Assistants with LangChain, Self-Attention and the Encoder-Decoder Framework, Natural Language Querying for AI Assistants.
- *Model deployment*: model serialization, Rest API's, packaging, pipeline creation and model scaling.

ACADEMIC, IN-CLASSROOM SKILLS

- I possess a higher capability and flexibility in planning and constructing educational environments, as well as in adapting and applying problem-based, project-based, challenge-based, and service-based learning techniques.
- Integration of technology platforms to the classroom (flipped classroom) and teaching-learning process:
 - *Interactive platforms*: EdPuzzle (<https://edpuzzle.com>), Nearpod (<https://nearpod.com/>), GooseChase (<https://www.goosechase.com/>), Genially (<https://www.genial.ly/en>)
 - *Gamification*: Classcraft (<https://www.classcraft.com>)
 - *Warm-Up activities*: Kahoot, Mentimeter.
 - *Inverted classroom*: Flipgrid (<https://info.flipgrid.com/>), Miro (<https://miro.com/>).
 - *Video tutorials*: Screencast-O-Matic (<https://screencast-o-matic.com/>), Loom (<https://www.loom.com/>)

- *Livestreaming:* OBS (<https://obsproject.com/>)

LANGUAGES

- Spanish: Native
- English: Advanced level: **TOEFL IBT: 97. IELTS: Overall band score: 7.5**. CEFR level: C1.

ANNEX 1: DESCRIPTION OF COURSES OFFERED

Full-Time professorships

Saint Louis University	Graduate level (Spring and Fall terms): <ul style="list-style-type: none">- AA5300 Advanced Analytics (Machine & Deep Learning modeling.)- AA5200 Visualization, feedback, and Dissemination.- CYBR5240 Cloud Security- AA5750 Contemporary issues in Analytics (Deep Learning, Image recognition, NLP, and Prompt Engineering, LLMs and RAG-based Agents.)
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UDEM (Universidad de Monterrey)	Typical Spring term. Undergraduate Level: <ul style="list-style-type: none">- IN3007 <i>Forecasting Methods for decision making</i> (time series, ARMA/ARIMA and Logistics regression models) using R.- IN2410 <i>Operations Management</i>. Supply Chain Modeling, Analysis and Design of Operations, Logistics, and inventory management.- IN3416 <i>Strategic Planning and Operations Management</i>. Strategy deployment and design of operations using Systems Dynamics.- IN2775 <i>Business Model Innovation</i>. Innovation systems, disruptive innovation, creation of innovative business models, modeling of innovation adoption.- I am a leading advisor of undergraduate theses based on Predictive Analytics and Entrepreneurship. See annex six for a broad explanation of the research guided under Predictive Analytics field. Please see annex seven for a description of the MVB (Minimum Viable Business) methodology and development program I designed (currently used at UDEM's Engineering School) to foster entrepreneurial projects among engineering students. Also, annex eight shows some examples of current operating start-ups that emerged from this program.
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Typical Fall term. Undergraduate Level:

- **IN3007** *Forecasting Methods for decision making* (time series and linear, and Logistics regression models)
- **IN2431** *Quantitative Methods for decision making* (probability theory, Bayesian methods and inference, decisions under uncertainty and probabilistic scenarios, TOC (Theory of Constraints), Waiting Line systems (Queue systems) and Inventory Decision.
- **AD3465** *Seminar in Market Research* (seminar for undergraduate Marketing studies: implementing essential multivariate techniques for data analysis, using SPSS and R).
- **I am a leading advisor** of undergraduate theses based on Predictive Analytics, Sales Forecasting and Entrepreneurship. See Annex 4 for a specific explanation of the research guided by Analytics. Please see Annex 5 for a description of a methodology and development program I designed (currently used at UDEM's Engineering School) to foster entrepreneurial projects among engineering students. Also, annex five shows some examples of current operating start-ups that emerged from this program.

Graduate Level:

- **IN3304** Advanced Artificial Intelligence (Deep Learning)
- **AD3006** Marketing (Marketing Strategy and Implementation, Capstone Marketing Project)

- **AD6065** Product development and Innovation (Product development process and Capstone project)

**ITESM
Sonora Norte
Campus**

Spring term. Undergraduate Level:

- **AD2011** *Innovation, Markets and Technological Development*
- **AD3018** *Models and Processes for Planning*
- **RH100** Organizational Behavior
- **DE3013** *Pre-incubation and Incubation of Start-ups*
- **NI2018** *Analysis and Management of Supply Chain*

Fall term. Undergraduate Level:

- **NI2018** *Analysis and Management of Supply Chain*
- **MT3023** Product and Brand development

**ITESM
Guadalajara
Campus**

Spring and Fall courses, undergraduate:

- *Market Research*
- *Marketing Intelligence*
- *New Product Development*
- *Business-to-Business Marketing*

ANNEX 2. RECENT TEACHING EVALUATIONS AND STUDENTS' COMMENTS

Saint Louis University. Fall 2024-1



SAINT LOUIS UNIVERSITY

Course Feedback Survey Report for FL2024 AA-5200-16- Visualization, Feedback and Dissemination (Juan Ignacio Gonzalez Espinosa) - Fall 2024

Project Title: Fall 2024 End-of-Term Course Feedback Surveys

Course Audience: 102
Responses Received: 31
Response Rate: 30.39%

This information can be verified by contacting: Dr. Srikanth Mudigonda, Director of Analytics, @ srikanth.mudigonda@slu.edu

Questions about the Instructor Juan Ignacio Gonzalez Espinosa

Question	Your Score			Department (Professional Studies Graduate)			College (Schl for Professional Studies)		
	Response Count	Mean	Median	Response Count	Mean	Median	Response Count	Mean	Median
The instructor communicated ideas and information clearly.	31	3.97	4.00	1519	3.84	4.00	1792	3.83	4.00
The instructor demonstrated enthusiasm for the subject matter.	31	3.97	4.00	1519	3.85	4.00	1792	3.84	4.00
The instructor provided feedback/critique that helped me with subsequent work in the course.	31	3.97	4.00	1519	3.84	4.00	1792	3.81	4.00
The instructor treated students with respect.	31	3.97	4.00	1519	3.91	4.00	1792	3.90	4.00
The instructor was available for assistance when needed.	31	3.97	4.00	1519	3.89	4.00	1792	3.86	4.00

Comments

Juan Ignacio Gonzalez Espinosa is an excellent instructor who excels at explaining practical concepts in class. His hands-on approach, especially with Power BI visuals, fosters a deeper understanding. He ensures that students grasp every detail and encourages practice, making the learning experience highly effective and enjoyable.

He's a great professor.

No suggestions, everything is well explained And practised.

Very Interactive and helping

amazing teacher

He explained everything clear, my favorite professor

No comments

I am very glad that my professor is Juan Ignacio because his explanation is clear and always there for us whenever we had doubts.


Juan Ignacio Gonzalez Espinosa is a knowledgeable and engaging instructor who effectively explains complex topics in an easy-to-understand manner. His teaching style fosters an interactive and supportive learning environment.

Great professor, he always helped in the easiest way to resolve my queries.

I wish to have Dr Juan as my instructor for the whole course

Juan Ignacio Gonzalez Espinosa is insightful and approachable, but incorporating more varied teaching methods, such as group discussions or hands-on activities, could foster greater student engagement and understanding. Providing more timely feedback on assignments would also enhance the learning experience.

Nothing



SAINT LOUIS UNIVERSITY

Course Feedback Survey Report for FL2024 AA-5300-12- Advanced Analytics (Juan Ignacio Gonzalez Espinosa) - Fall 2024

Project Title: Fall 2024 End-of-Term Course Feedback Surveys

Course Audience: 52
Responses Received: 10
Response Rate: 19.23%

This information can be verified by contacting: Dr. Srikanth Mudigonda, Director of Analytics, @ srikanth.mudigonda@slu.edu

Questions about the Instructor Juan Ignacio Gonzalez Espinosa

Question	Your Score			Department (Professional Studies Graduate)			College (Schl for Professional Studies)		
	Response Count	Mean	Median	Response Count	Mean	Median	Response Count	Mean	Median
The instructor communicated ideas and information clearly.	10	3.90	4.00	1519	3.84	4.00	1792	3.83	4.00
The instructor demonstrated enthusiasm for the subject matter.	10	3.90	4.00	1519	3.85	4.00	1792	3.84	4.00
The instructor provided feedback/critique that helped me with subsequent work in the course.	10	4.00	4.00	1519	3.84	4.00	1792	3.81	4.00
The instructor treated students with respect.	10	4.00	4.00	1519	3.91	4.00	1792	3.90	4.00
The instructor was available for assistance when needed.	10	4.00	4.00	1519	3.89	4.00	1792	3.86	4.00

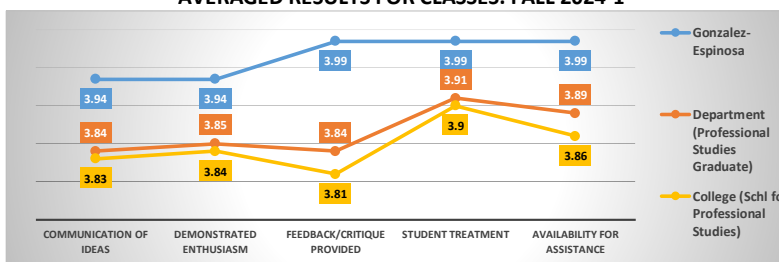
Comments

Good

Hi Professor,
Great teaching by the way , your ideas and suggestions helped me a lot to be successful in the course.
Thank You .


Thank you sir for all ur support and appreciate your work

AVERAGED RESULTS FOR CLASSES. FALL 2024-1



ANNEX 2. RECENT TEACHING EVALUATIONS AND STUDENTS' COMMENTS (Cont.)

Saint Louis University. Fall 2024-2



**COURSE FEEDBACK SURVEY REPORT FOR FL2024 AA-5750-22-
CONTEMPORARY ISSUES IN ANALYTICS (JUAN IGNACIO GONZALEZ ESPINOSA) - FALL 2024**

Project Title: Fall 2024 End-of-Term Course Feedback Surveys

Course Audience: 56
Responses Received: 7
Response Rate: 12.50%

This information can be verified by contacting: Dr. Srikanth Mudigonda, Director of Analytics, @ srikanth.mudigonda@slu.edu

Questions about the Instructor Juan Ignacio Gonzalez Espinosa

Question	Your Score			Department (Professional Studies Graduate)			College (Schl for Professional Studies)		
	Response Count	Mean	Median	Response Count	Mean	Median	Response Count	Mean	Median
The instructor communicated ideas and information clearly.	7	4.00	4.00	1814	3.84	4.00	2171	3.82	4.00
The instructor demonstrated enthusiasm for the subject matter.	7	4.00	4.00	1814	3.86	4.00	2171	3.84	4.00
The instructor provided feedback/critique that helped me with subsequent work in the course.	7	4.00	4.00	1814	3.84	4.00	2171	3.81	4.00
The instructor treated students with respect.	7	3.86	4.00	1814	3.91	4.00	2171	3.90	4.00
The instructor was available for assistance when needed.	7	3.86	4.00	1814	3.88	4.00	2171	3.85	4.00
Comments									
Very Helpful and Thankful									



**COURSE FEEDBACK SURVEY REPORT FOR FL2024 AA-5750-26-
CONTEMP ISSUES IN ANALYTICS (JUAN IGNACIO GONZALEZ ESPINOSA) - FALL 2024**

Project Title: Fall 2024 End-of-Term Course Feedback Surveys

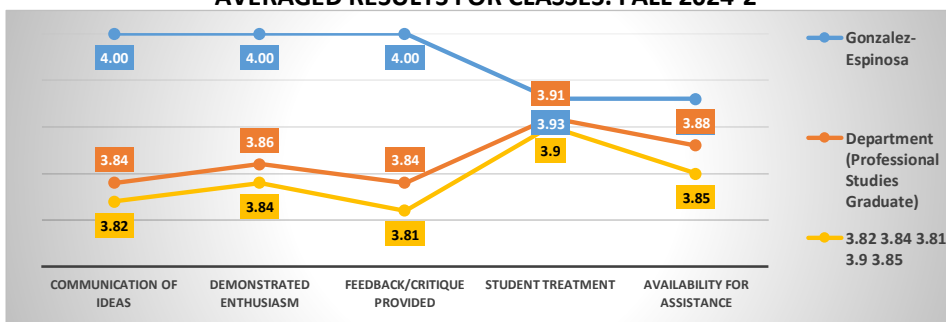
Course Audience: 61
Responses Received: 11
Response Rate: 18.03%

This information can be verified by contacting: Dr. Srikanth Mudigonda, Director of Analytics, @ srikanth.mudigonda@slu.edu

Questions about the Instructor Juan Ignacio Gonzalez Espinosa


Question	Your Score			Department (Professional Studies Graduate)			College (Schl for Professional Studies)		
	Response Count	Mean	Median	Response Count	Mean	Median	Response Count	Mean	Median
The instructor communicated ideas and information clearly.	11	3.91	4.00	1814	3.84	4.00	2171	3.82	4.00
The instructor demonstrated enthusiasm for the subject matter.	11	4.00	4.00	1814	3.86	4.00	2171	3.84	4.00
The instructor provided feedback/critique that helped me with subsequent work in the course.	11	4.00	4.00	1814	3.84	4.00	2171	3.81	4.00
The instructor treated students with respect.	11	4.00	4.00	1814	3.91	4.00	2171	3.90	4.00
The instructor was available for assistance when needed.	11	4.00	4.00	1814	3.88	4.00	2171	3.85	4.00
Comments									
Professor was Very helpful and if having any doubts explaining clearly.									
Excellent Lecturer									

AVERAGED RESULTS FOR CLASSES. FALL 2024-2



ANNEX 2. RECENT TEACHING EVALUATIONS AND STUDENTS' COMMENTS (Cont.)

Saint Louis University. Spring 2024-1



Course Feedback Survey Report for SP2024 AA-5300-12 / AA-5300-13 / AA-5300-14(SP2024 AA-5300-12-Advanced Analytics,SP2024 AA-5300-13-Advanced Analytics,SP2024 AA-5300-14-Advanced Analytics) (Juan Gonzalez-Espinosa) - Spring 2024

Project Title: **Spring 2024 End-of-Term Course Feedback Surveys**

Course Audience: **76**
Responses Received: **28**
Response Rate: **36.84%**

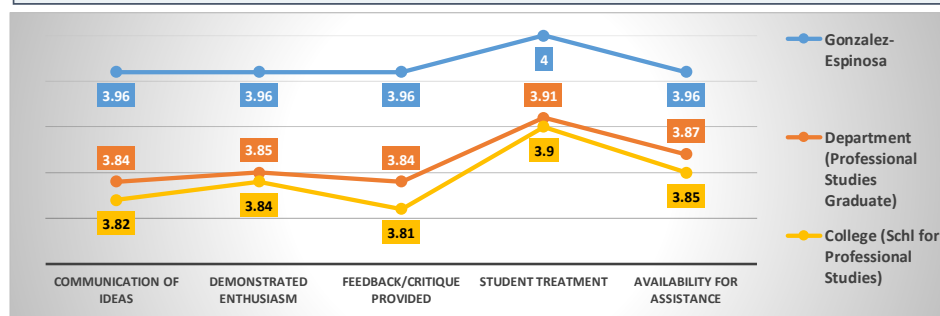
Questions about the Instructor **Juan Gonzalez-Espinosa**

1. The instructor communicated ideas and information clearly.				2. The instructor demonstrated enthusiasm for the subject matter.			
Options	Score	Count	Percentage	Options	Score	Count	Percentage
Always	4	27	96.43%	Always	4	27	96.43%
Often	3	1	3.57%	Often	3	1	3.57%
Sometimes	2	0	0.00%	Sometimes	2	0	0.00%
Never	1	0	0.00%	Never	1	0	0.00%
3. The instructor provided feedback/critique that helped me with subsequent work in the course.				4. The instructor treated students with respect.			
Options	Score	Count	Percentage	Options	Score	Count	Percentage
Always	4	27	96.43%	Always	4	28	100.00%
Often	3	1	3.57%	Often	3	0	0.00%
Sometimes	2	0	0.00%	Sometimes	2	0	0.00%
Never	1	0	0.00%	Never	1	0	0.00%
5. The instructor was available for assistance when needed.				<p>This information can be verified by contacting: Dr. Srikanth Mudigonda, Director of Analytics, @ srikanth.mudigonda@slu.edu</p>			
Options	Score	Count	Percentage				
Always	4	27	96.43%				
Often	3	1	3.57%				
Sometimes	2	0	0.00%				
Never	1	0	0.00%				

Questions about the Instructor **Juan Gonzalez-Espinosa**


Question	Your Score			Department (Professional Studies Graduate)			College (Schl for Professional Studies)		
	Response Count	Mean	Median	Response Count	Mean	Median	Response Count	Mean	Median
The instructor communicated ideas and information clearly.	28	3.96	4.00	1804	3.84	4.00	2002	3.82	4.00
The instructor demonstrated enthusiasm for the subject matter.	28	3.96	4.00	1804	3.85	4.00	2002	3.84	4.00
The instructor provided feedback/critique that helped me with subsequent work in the course.	28	3.96	4.00	1804	3.84	4.00	2002	3.81	4.00
The instructor treated students with respect.	28	4.00	4.00	1804	3.91	4.00	2002	3.90	4.00
The instructor was available for assistance when needed.	28	3.96	4.00	1804	3.87	4.00	2002	3.85	4.00

Comments
Professor, Juan Gonzalez-Espinosa is very supportive and helps me whenever I have doubts on the topics discussed in the class and also with the assignments. I would recommend him to every student for the Python programming.
No comments
I really loved the classes conducted by Professor Juan, they were very engaging and interactive.
the instructor always made sure he explains the codes in a way we can understand and cleared any doubts we got in class.



ANNEX 2. RECENT TEACHING EVALUATIONS AND STUDENTS' COMMENTS (Cont.)

Saint Louis University. Summer 2024-2.



SAINT LOUIS UNIVERSITY

Course Feedback Survey Report for SP2024 AA-5200-212-Visual, Feedback & Disseminatn (Juan Gonzalez-Espinosa) - Spring 2024

Project Title: Spring 2024 End-of-Term Course Feedback Surveys

Course Audience: 13
Responses Received: 3
Response Rate: 23.08%

Questions about the Instructor Juan Gonzalez-Espinosa

1. The instructor communicated ideas and information clearly.				2. The instructor demonstrated enthusiasm for the subject matter.			
Options	Score	Count	Percentage	Options	Score	Count	Percentage
Always	4	3	100.00%	Always	4	3	100.00%
Often	3	0	0.00%	Often	3	0	0.00%
Sometimes	2	0	0.00%	Sometimes	2	0	0.00%
Never	1	0	0.00%	Never	1	0	0.00%

3. The instructor provided feedback/critique that helped me with subsequent work in the course.				4. The instructor treated students with respect.			
Options	Score	Count	Percentage	Options	Score	Count	Percentage
Always	4	3	100.00%	Always	4	3	100.00%
Often	3	0	0.00%	Often	3	0	0.00%
Sometimes	2	0	0.00%	Sometimes	2	0	0.00%
Never	1	0	0.00%	Never	1	0	0.00%

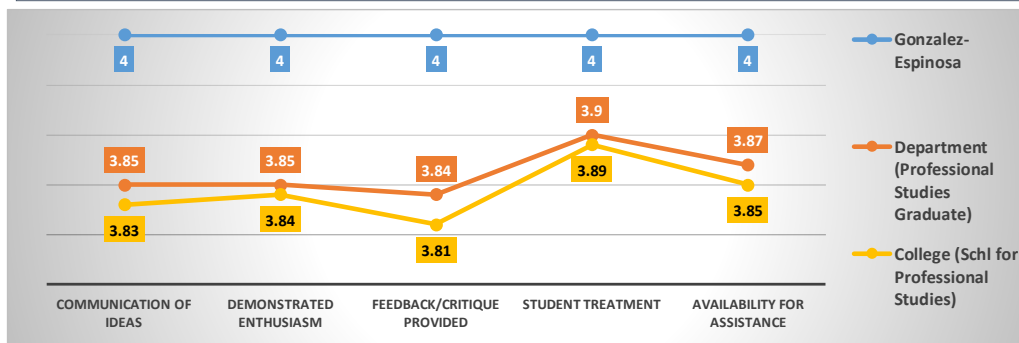
5. The instructor was available for assistance when needed.			
Options	Score	Count	Percentage
Always	4	3	100.00%
Often	3	0	0.00%
Sometimes	2	0	0.00%
Never	1	0	0.00%

This information can be verified by contacting:
Dr. Srikanth Mudigonda, Director of Analytics, @
srikanth.mudigonda@slu.edu

Questions about the Instructor Juan Gonzalez-Espinosa

Question	Your Score			Department (Professional Studies Graduate)			College (Schl for Professional Studies)		
	Response Count	Mean	Median	Response Count	Mean	Median	Response Count	Mean	Median
The instructor communicated ideas and information clearly.	3	4.00	4.00	3094	3.85	4.00	3454	3.83	4.00
The instructor demonstrated enthusiasm for the subject matter.	3	4.00	4.00	3094	3.85	4.00	3454	3.84	4.00
The instructor provided feedback/critique that helped me with subsequent work in the course.	3	4.00	4.00	3094	3.84	4.00	3454	3.81	4.00
The instructor treated students with respect.	3	4.00	4.00	3094	3.90	4.00	3454	3.89	4.00
The instructor was available for assistance when needed.	3	4.00	4.00	3094	3.87	4.00	3454	3.85	4.00

Comments	
Juan Gonzalez-Espinosa Gave me valuable information and suggestions on course assignments.	



ANNEX 2. RECENT TEACHING EVALUATIONS AND STUDENTS' COMMENTS

(Cont.)

SUMMARY OF TEACHING EVALUATIONS (UNIVERSIDAD DE MONTERREY)

Teacher's name: Juan Ignacio González Espinosa Average grade of classes offered.

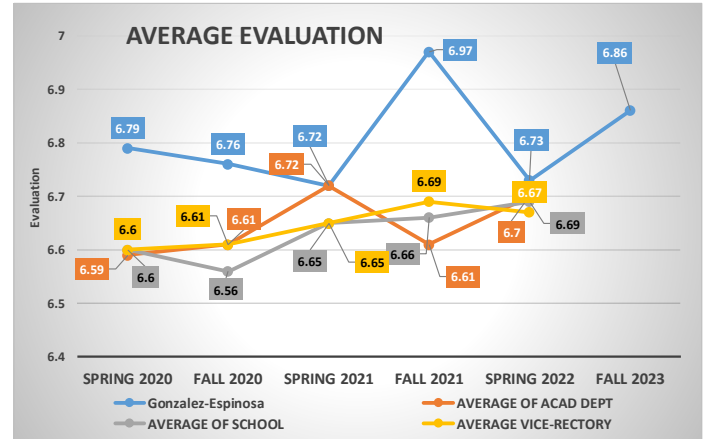
This information can be verified by contacting: Dr. Ricardo Mercado, Head of Department of Civil Engineering and Engineering Management '@jesus.mercado@udem.edu

	Question																		AVERAGE OF ACAD DEPT	AVERAGE OF SCHOOL	AVERAGE VICE- RECTORY	
TERM	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15	P16	PROM	P17	P18			
SPRING 2020	6.91	6.84	6.65	6.77	6.61	6.75	6.63	6.82	6.84	6.88	6.77	6.81	6.82	6.86	6.84	6.86	6.79	6.82	6.68	6.59	6.6	6.6
FALL 2020	6.89	6.71	6.64	6.64	6.68	6.82	6.5	6.64	6.64	6.86	6.86	6.89	6.86	6.82	6.82	6.86	6.76	6.86	6.82	6.61	6.56	6.61
SPRING 2021	6.84	6.69	6.69	6.71	6.59	6.66	6.64	6.69	6.76	6.79	6.66	6.81	6.72	6.71	6.76	6.84	6.72	6.86	6.74	6.72	6.65	6.65
FALL 2021	6.96	6.96	6.92	6.92	6.96	6.96	7	6.96	7	6.96	7	6.96	7	6.96	7	6.96	6.97	6.85	6.85	6.61	6.66	6.69
SPRING 2022	6.76	6.68	6.68	6.69	6.64	6.81	6.58	6.71	6.73	6.81	6.68	6.81	6.75	6.78	6.81	6.81	6.73	6.8	6.83	6.7	6.69	6.67
FALL 2023	7	7	6.75	6.75	6.5	6.75	6.5	7	7	7	7	7	7	7	6.5	7	6.86	7	7	Not Available	Not Available	Not Available

MEANING OF QUESTIONS ON EVALUATION

Avanza 360 contains levels where 7 is the best descriptor of the elements of the teaching/learning process.VOLUNTARY PARTICIPATION

- The teacher is proficient in his/her area of expertise.
- The professor is a facilitator of active, collaborative and self-managed learning.
- The professor contributes to my learning to exceed my expectations of the course.
- The teacher clearly plans and designs his/her course.
- The teacher makes sure that the course content and activities are understandable.
- The professor listens, understands and supports students within the institutional framework.
- The professor offers timely feedback and promotes reflection for the continuous improvement of your academic performance.
- Theoretical contents are linked to practical applications.
- Intellectual challenges are posed in the course to achieve the learning objectives.
- The policies and rules of behavior that govern the course are shared from the beginning.
- The student's performance is comprehensively evaluated according to the learning objectives of the course through measurable criteria.
- The course uses technological resources to enrich learning.
- In the course there is an atmosphere of dialogue, trust and reciprocal respect, fair treatment without favoritism or discrimination.
- The teacher encourages an attitude of service and shows interest in the common good.
- The professor facilitates and recognizes the participation of students in formative activities, in accordance with institutional regulations.
- Academic integrity is promoted and measures are taken to prevent any dishonest act.
- I always comply with my individual and team work.
- I constantly contribute to the achievement of personal and group learning in the course.



STUDENTS' COMMENTS

SPRING 2020

COURSE	COMMENTS
Innovation and Business Models	I like his classes very much.
	He is a very good teacher and knows a lot about the subject.
	I really like the class!
	Excellent professor, a point in his favor is that he promotes that curiosity to look for innovations, something that I didn't do much. But when taking his classes he mentions, books, companies, new and unknown brands for me, innovations that are currently and many like me, we may not even be aware of their existence and we are not taking advantage of their benefits. I like the way he teaches his subject of innovation with the cases, mind maps and examples we see in class.
Management for Engineers	Good course.
	He is always attentive to his students
	Very good teacher, he teaches in a collaborative way and makes the group work and participate.
	Very good teacher
Operations Management	Very good structure of the complete program of the subject.
	The way he gives his classes and explains the topics is very cool!!!
	Very good teacher, very structured, very intelligent, and adapts to all types of students.
	The professor is crack, he is currently one of the most prepared professors in industrial engineering. He has the VOCATION to be a professor, and VERY few professors have that, he likes to teach, very few professors at udem like to teach. He treats the students well, he knows too much, I like that he uses inspirational phrases, because motivation is ALWAYS important. I really appreciate it, this is my second class with him. HOWEVER, the workload is EXCESSIVE, it makes the experience overwhelming, really if we had that same workload in the other subjects that we take, we wouldn't even joke about it, we have to remember that we also have a life and it is important to dedicate time to the things that make us human, like exercise, family time, etc. On the other hand, we always went past 9:50 and I think it is important to respect established times. You can see that the teacher prepares his class very well.
Strategic and operational plan	The teacher is very prepared and likes to teach his class.
	I would like to dedicate more time to the advanced use of excel or platforms used in the course.
	It is always an honor to take classes with Dr. Juan Ignacio because he is constantly preparing himself to offer us the best.
	The class is too demanding and with a lot of work compared to the other classrooms of this subject and considering that most of the students are taking internships or pef. The class is too tedious
	He takes time to grade the cases and activities, but the class is very cool and dynamic. I feel that I have learned a lot of practical things since we use certain tools in the cases.

ANNEX 2. RECENT TEACHING EVALUATIONS AND STUDENT'S COMMENTS (Cont.)

FALL 2020	
COURSE	COMMENT
Management for Engineers	VERY GOOD TEACHER, it is evident that he works hard in the preparation of his classes, he is the teacher who has put the most effort of all those I took this semester, he schedules all his activities to be didactic and fun to encourage the student's interest in learning. It is evident that he cares that his students learn in the best way. Definitely one of my favorite classes.
	Excellent teacher, excellent organization, excellent content
	Excellent teacher
	Excellent class
	The professor explains very well, and I realize that he loves to teach. However, sometimes I feel that he becomes harder than usual for inexplicable reasons.
Forecasting models for decision making	Although there is a lot of homework, I really like the dynamism that exists in the class and how the teacher manages to get my attention through the way he teaches the subject. He always seeks our participation and to apply the concepts seen to real cases.
	He does not respect class schedules, he finishes the class at least 5 minutes after his schedule.
	I liked the way he gave the class, he is very clear and very intelligent in his way of inducing us in the basic theory of forecasting models, but as feedback I would say that he should try not to take too much time for the roll call and at the beginning of the class, as it extends a lot, so we are falling behind in the content of the course.
	The professor is amazing, I have never had a class that really got me so excited with the class, I love how he explains it, it really makes it clear when and how to use these tools, and gives you that feeling so that you get really impressed with the information. Real one of the best teachers I have ever had, I hope to meet him again.
Strategic and operational plan	Very good teacher, adapts to the general situation of the students.
	A lot of work that could be avoided.
	Good teacher, just that it takes time to review things because he teaches many subjects and works on other things at Udem.
SPRING 2020	
COURSE	COMMENT
Management for Engineers	Very good teacher, explains his class very well, always clarifies doubts and is there for us in case of problems with the subject or equipment.
	No comments.
	I really enjoyed the class, the teacher is very knowledgeable about the subject and provides more information than I have seen. I really enjoyed the course and learned some very useful things for my future.
	I found the methodology of the course to be excellent
	Very nice class, the only thing I would like is that the instructions of the projects are a little more detailed.
	Very good profe!!!! He knows a lot and transmits it very well!
	The course was very good, the collaborative activities and that everything was focused on putting it into practice was very fruitful for learning.
	The teacher is very good and the important thing is not like the others in that all our activities are related to the labor field giving an extraordinary plus. :)
	I find it valuable that the teacher uses real life examples for his explanations because they help to better understand the information. I also like that he is very flexible and his grading system adjusts to the students' wishes. He is very attentive and always listens to the students. My suggestion is that instead of ordering a lot of work on some days, the load should be distributed in a better way, as some assignments take a long time.
	Excellent course
Strategic and operational plan	They should hire more teachers like him who are interested not only in teaching but also in spending time with their students. He is also a teacher who knows a lot about the subject he teaches.
	The teacher does not give agile feedback, I do not find an order in the class and does not relate what he teaches in class vs. what he marks us in the projects: he asks for things that he has not taught us and not all of us have had other classes where they teach it. A lot of time spent on student presentations that don't add much value. Requires a lot of participation that is difficult to get in busy classes. Too much work between semesters (not all of us are just students and I prefer to be taught in class, not spend 20 hours trying to do a deliverable).
	He can only improve a little bit in the aspect of being more direct and clear with the instructions, everything else is very good, thank you very much teacher.
	He is a really excellent teacher, I have learned a lot from his class.
Strategic and operational plan	Excellent teacher, his way of teaching and his course in general.
	Very good teacher. Excellent subject. Only if it gets to be a lot of workload. Other than that an excellent job.
	I really like how the class is very dynamic.
Forecasting models for decision making	I struggled at first but it became my favorite class of the semester.

ANNEX 2. RECENT TEACHING EVALUATIONS AND STUDENTS' COMMENTS (Cont.)

FALL 2021

COURSE	COMMENT
Management for Engineers	Just as a suggestion, it seems to me that participation is worth too much and as there are many of us, sometimes it does not lend itself to all of us participating. Very good class, very dynamic and very good explanation by the professor.
Forecasting models for decision making	Excellent teacher, explains very well and clarifies all doubts. A super prepared teacher, willing to help. HIGHLY RECOMMENDED One of the best teachers I have had in my career. I have already taken two classes with him and I notice that he is very organized in terms of the course in Blackboard, weightings and deliveries. He always motivates us to use technologies and to challenge ourselves. It helps us to have a vision from a GSEs point of view. As feedback would be the punctuality. But everything excellent in general. Great subject and great teacher The subject matter is undoubtedly very applicable and although the content is sometimes a little complicated to understand Dr. Juan Ignacio knows how to instruct us so that it is understood, making use of many real examples, delos best teachers I've had. The class is very enriching and you learn a lot. Incredible teacher and above all a human being. He always listens and is attentive to his students, supporting them. He masters very well all the topics of the subject. I like that he is always prepared with his presentations. And his opening sentences. I also like that you share with us in advance the data to be used in the exam so we can analyze them in time. I am very satisfied with this class and I really learned a lot from you. Thank you for sharing with us all your knowledge. Best of luck.

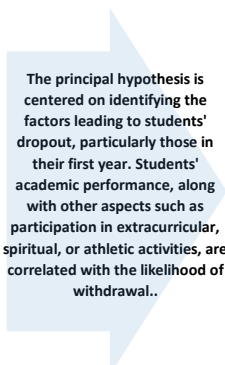
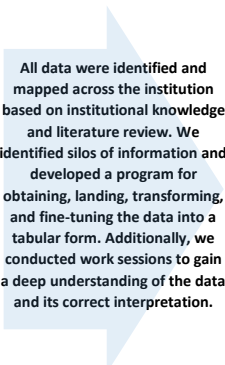
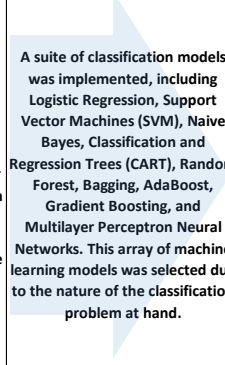
SPRING 2022

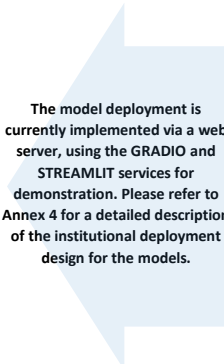
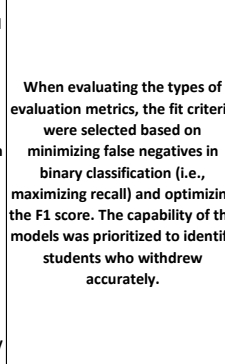
COURSE	COMMENT
Management for Engineers	None. A very good teacher, however the team dynamics do not work so well because there are participants who do not contribute anything. Thank you very much for everything teacher very good class Great teacher, passionate and eager to teach. It was a very interesting subject! good subject development. The teacher gives his classes in a very practical and excellent way. Thank you very much! :)) Thank you for sharing your knowledge with us. I learned a lot in this subject.
Innovation and Business Models	Teamwork is detrimental to the class experience and members who disobey established rules are not dealt with properly. Team testing jeopardizes academic integrity as some receive more than they deserve or would get on their own merit. Good class
Forecasting models for decision making	I really like the way the class is very interactive. A lot of knowledge from the professor, it is always good to learn from people as prepared as he is. I would like the participation to lower a little the percentage of weight in the final grade. Excellent teacher, he helps, listens, gives opportunities, is kind, explains very well and has a lot of empathy with the students. He understands when you have a difficult situation. The class is clear
Strategic and operational plan	The teacher is an excellent teacher, the class is interactive and the activities and assignments reinforce knowledge.

FALL 2023

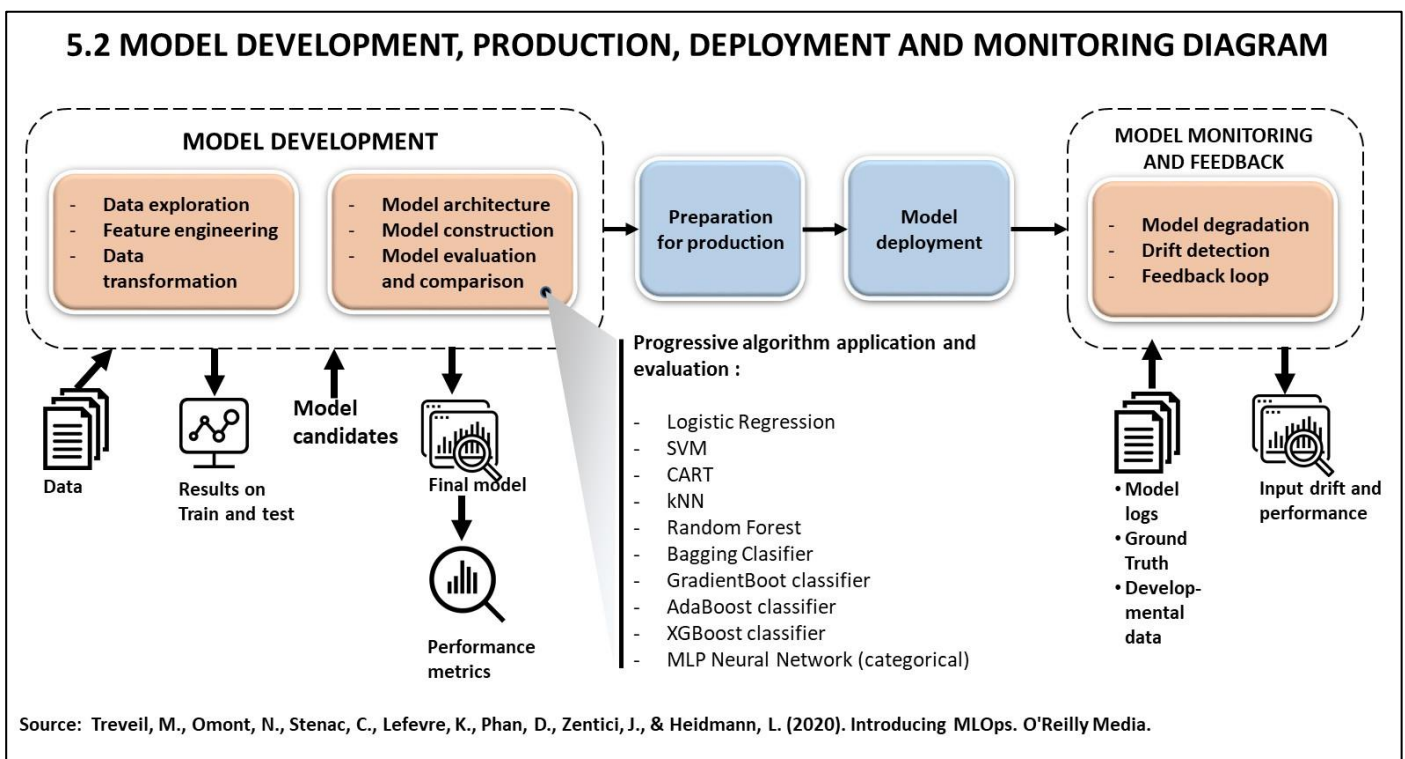
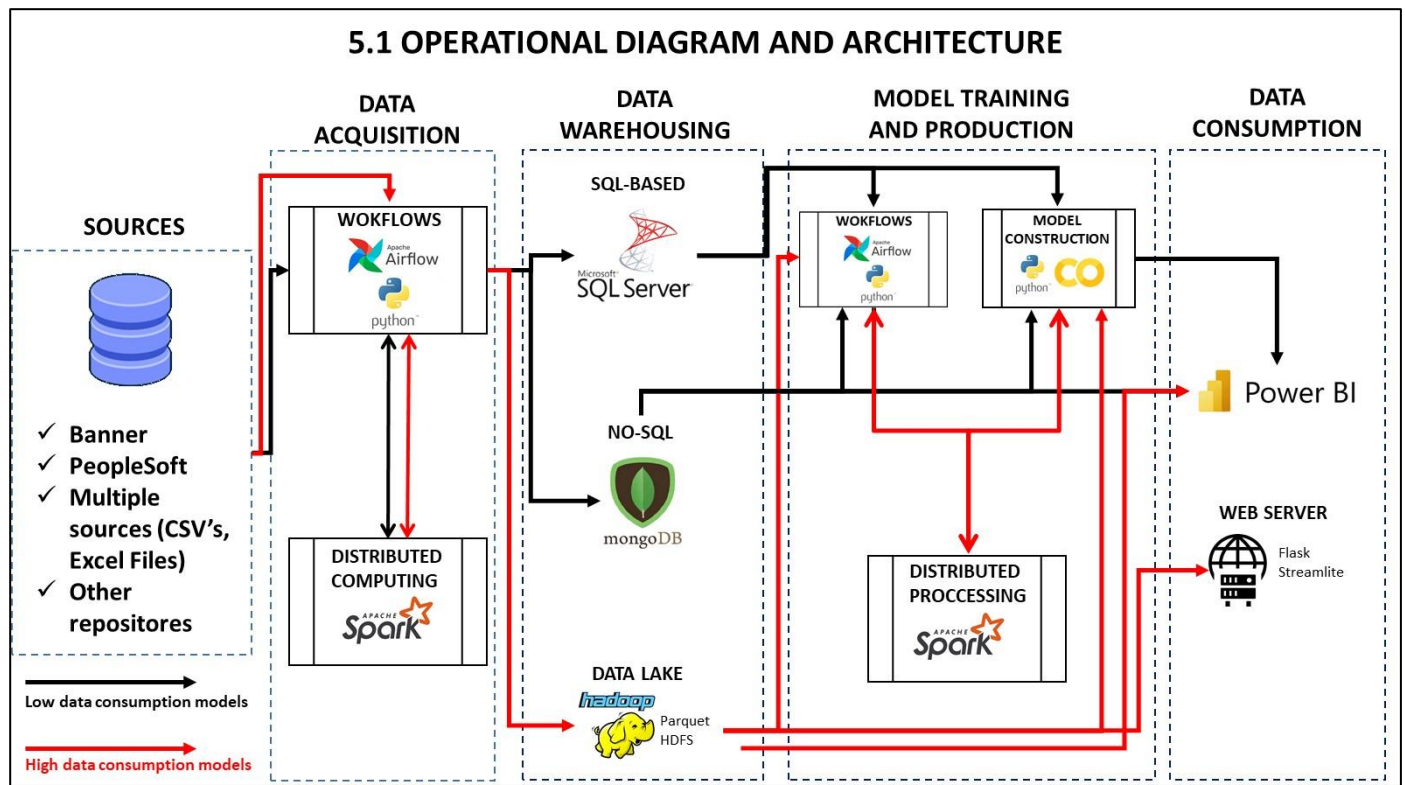
COURSE	COMMENT
Marketing Research Seminary	An exceptionally good teacher, always willing to address questions and genuinely concerned with the students' learning. He possesses extensive knowledge and consistently strives to stay updated on teaching methods, technological tools for the classroom, etc.
Artificial Intelligence (Graduate)	Dr. Gonzalez has an extensive grasp of the subject, consistently brought highly relevant topics to the classroom in relation to the course, and possesses an excellent ability to teach. It was an outstanding course, very enriching and dynamic. Spending time to mathematically review each model and then observing its execution/implementation in a programming environment, I believe, is the best way to explain how to implement them.

ANNEX 3: DESCRIPTION OF ML STUDENT RETENTION AND STUDENT SUCCESS MODELS DEVELOPED

MODEL	GOAL	DATA COLLECTION	DATA PRE-PROCESSING	EDA	MODEL BUILDING AND TRAINING
Student Retention	 <p>The principal hypothesis is centered on identifying the factors leading to students' dropout, particularly those in their first year. Students' academic performance, along with other aspects such as participation in extracurricular, spiritual, or athletic activities, are correlated with the likelihood of withdrawal..</p>	<p>Considerations include scholar outcomes, psychological support consultations, advising, tutoring, and counseling. Additionally, professor evaluations, payment behaviors, outcomes of personalized trajectory advising sessions, class absences, characteristics of applicants (average score from previous level, entrance exam score), academic integrity cases and personal characteristics are also considered.</p>	 <p>All data were identified and mapped across the institution based on institutional knowledge and literature review. We identified silos of information and developed a program for obtaining, landing, transforming, and fine-tuning the data into a tabular form. Additionally, we conducted work sessions to gain a deep understanding of the data and its correct interpretation.</p>	<p>All EDA tests and routines were implemented. Checking of outliers, missing data and errors were detected via EDA. Most cases detected were corrected or deleted but represented less than 0.01% of the total samples. Feature creation was deployed, and five additional variables were integrated.</p>	 <p>A suite of classification models was implemented, including Logistic Regression, Support Vector Machines (SVM), Naive Bayes, Classification and Regression Trees (CART), Random Forest, Bagging, AdaBoost, Gradient Boosting, and Multilayer Perceptron Neural Networks. This array of machine learning models was selected due to the nature of the classification problem at hand.</p>
Student Success					

MODEL	MONITORING & MAINTENANCE	MODEL DEPLOYMENT	MODEL SELECTION	HYPERPARAMETER TUNNING	MODEL VALIDATION AND EVALUATION
Student Retention	 <p>Ground truth validation is available only for the Retention Model at the beginning of the subsequent semester. In contrast, the Student Success model does not allow using ground truth. The occurrence of data drift will be monitored using statistical tests to identify differences between the training data and new input data under analysis. Additionally, we employ a Domain Classifier to assess drift scores for testing these differences. These tests will be carried out every semester.</p>	<p>The model deployment is currently implemented via a web server, using the GRADIO and STREAMLIT services for demonstration. Please refer to Annex 4 for a detailed description of the institutional deployment design for the models.</p>	<p>Concerning the model of student retention, and based on evaluation metrics, the best models were Logistic Regression and Random Forest, with more than 95% on Recall, F1 and above 90% on Accuracy. Regarding the model of Student Success, a recall of 86% was obtained, and Accuracy was above 80%; both models are versions on development.</p>	<p>Several significant hyperparameters were optimized for tree-based models, including n_estimators, learning_rate, base_estimator, gamma, subsamples, max_depth, and reg_lambda. In the case of Logistic Regression, regularization and solver method were adjusted. For SVM, the kernel type was controlled. Given that we dealt with an undersampling issue, the Synthetic Minority Over-sampling Technique (SMOTE) was employed. Hyperparameter optimization proved to be an effective strategy for reducing overfitting.</p>	 <p>When evaluating the types of evaluation metrics, the fit criteria were selected based on minimizing false negatives in binary classification (i.e., maximizing recall) and optimizing the F1 score. The capability of the models was prioritized to identify students who withdrew accurately.</p>
Student Success					

ANNEX 4. DESCRIPTION OF MODEL ARCHITECTURE, PRODUCTION AND DEPLOYMENT



ANNEX 5. PROFESSIONAL (INDUSTRY) EXPERIENCE

AXALTA POWDER COATING SYSTEMS MÉXICO (former Dupont Coatings Systems)

**Marketing and Service
Manager for Mexico and
Central America. Powder.** Monterrey, México. (2014 – 2016)

Main activities:

Market segmentation and product portfolio management. New product planning and launching. Brand communication implementation. Demand forecasting planning process.

Achievements:

1. Planning and execution of the Axalta National Distributor Meeting in 2015.
2. Successful participation of Axalta Powder Coatings in National trade fairs (2014 and 2015)
3. Launching a new product catalog system based on the web.
4. Launching the new Powder coating systems for the economy segment.

MOTO REPUESTOS MONTERREY (A national leader in the distribution of spare parts and accessories for motorcycles)

Marketing Manager Monterrey, México. (2013 – 2014)

Main activities:

Planning and implementation of market strategies, launching new products and brands. Product portfolio management. Strategic competitor analysis.

Achievements:

1. Planning and successful launching of the BKR brand for specialized clothes, helmets, and accessories (<http://bkrmoto.com.mx/site/>)
2. Launching a new product catalog system based on the web.

GRUPO NOVEN (A national leader in the distribution of Pool and spa, pumping and water treatment systems)

Marketing Manager Monterrey, México. (2007 – 2008)

Main activities:

Planning and implementation of market strategies and launching of new products. Implement promotional triggers to the industrial market (new catalogs, technical and promotional files, web pages, national fairs, and expositions): Trade Marketing projects, Brand management.

Achievements:

1. Planning and successful Implementation of the CONAGUA 2008 Exposition, an owned, national industrial fair directed to distributors of Grupo Novem and EMMSA
2. Successful Positioning of brand KLAREN (Chlorine and septic products for pools)

VITROMEX RECUBRIMIENTOS GRUPO INDUSTRIAL SALTILLO

Market Intelligence Manager Saltillo, México. (2006 - 2007)

Main activities:

Planning and Implementation a competitive analysis system focused on competition (prices, growth, and market strategies) and market trends. I performed the function of the company's market research.

Achievements:

1. Strategic development of the 2007 national sales forecasting, detailed by territory, brand and SKUs.
2. Implement a biweekly competitive report on prices, new products, and relevant events.

NACIONAL DE ALIMENTOS Y HELADOS SA DE CV BOTANAS BOKADOS

Marketing Manager

Santa Catarina, México

(2005 - 2006)

Main activities:

Brand management. Effective planning and execution of new product projects, the kick-off of new products, Trade Marketing, Marketing research and Marketing Intelligence. Promotional and advertising campaigns (TV/RADIO)

Achievements:

1. Planning of the first integrated advertising campaign in the region. (TV and RADIO)
2. New product successful launch.

WHIRLPOOL MÉXICO

Marketing Manager (Service area)

Monterrey, México.

(2004 - 2005)

Main activities:

- Design, develop and execute strategies focused on the growth of the Service Contracts market and the Convenience Care Brand.
- Planning and accomplishment of projects to develop the distributor channels of parts (replacement parts)

Achievements:

1. Growth of Service Contract Sales: 15% on average, from October 04th to May 05th.
2. Integration of five new distributors since September 04th.

GRUPO SENDA (A national leader in passengers' land)

Brand Manager

Monterrey, México

(2003 - 2004)

Main activities:

- Planning and executing market research focused on finding the most relevant service elements (Purchase experience, boarding, traveling, and arriving) for every relevant route, implementing and leading projects to improve the product and related services.
- Planning and Implementing brand management activities (local advertising, promotional efforts, product differentiation, and trade marketing initiatives) for Transportes Tamaulipas and Autobuses Coahuilenses Brands.
- Design and Implementation of Marketing Intelligence systems for the brands assigned.

Achievements:

- Development of a Control Panel (Score Card) for every route to trigger consumer satisfaction
- Product design and implementation of market tests about ATM ticket sales and new display options at the Check-in desk (Plasma Displays and multimedia messages instead of the standard blackboard).

SIGMA ALIMENTOS CORPORATIVO (GRUPO ALFA)

**Channel development and distribution
Coordinator**

Garza García, México.

(2003 - 2003)

Main activities:

- Channel development projects (Loyalty Programs, development of POP materials, planning and development of new routes to maximize sales coverage)
- Design and implement tactical Marketing research to gain acquaintance with competitors' prices and trends patterns.
- Planning and execution of regional promotional campaigns.
- Implementation of Competitive analysis and projects for improvement.

Achievements:

1. Successful implementation of a Loyalty Program directed to "Mom and Pop's" stores and other dealers.
2. Develop a strategic information system for monitoring sales of market segments and product mix based on SAP.

SIGMA ALIMENTOS CORPORATIVO (GRUPO ALFA)

Pre-Sales and Electronic Commerce Coordinator

Garza Garcia, México

(2001 - 2003)

Main activities:

- Design and execute standardized and automated marketing research based on a Hand-Held Machine based on acquiring prices, stocks of competition, and POP.
- Design and execution of the Electronic Commerce strategies of Sigma Alimentos (www.misigma.com and sigmabasto.com)
- Implementation of Pre-Sales project in Sigma Alimentos, a viability test on the Los Reyes La Paz Branch.
- Planning and implementing new projects to develop the Direct (Mom and Pops, dealers, and distributors) and Super Market Channels.

Achievements:

1. Successful implementation of operations of the Electronic Store MiSigma.com.
2. Cost reduction and sales increase of about 7% due to the Pre-sales Project implementation.

SIGMA ALIMENTOS CORPORATIVO (GRUPO ALFA)

New Product Development Coordinator

Garza García, Mexico.

(2000 - 2001)

Main activities:

- Design and development of marketing research devoted to new product development and modification of existing lines (distribution, configuration, new flavors.)
- Brand management activities of the La Villita and Chalet (both cheese brands).
- Development of strategic information systems for brands assigned (based on AC Nielsen data).
- Planning, implementation and controlling of new product launching of the butter-substitute (margarine) brand.
- Design and Implementation of advertising and promotional campaigns nationwide for brands assigned

Achievements:

1. Development of the margarine brand, from product development, packaging, and positioning to negotiation with dealers.
2. Develop new product projects and modify existing lines to improve market share.

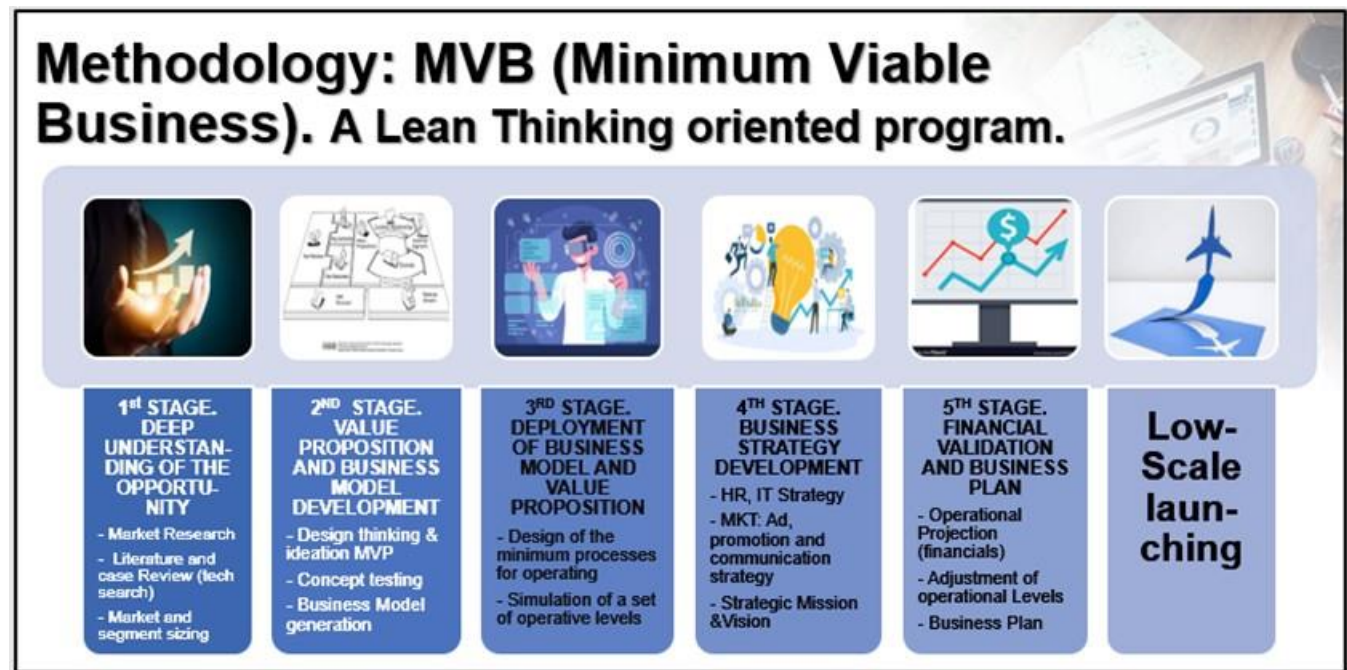
ANNEX 6. CHRONOLOGICAL DESCRIPTION OF SELECTED UNDERGRADUATE THESES (ANALYTICS-FOCUSED) DIRECTED.

PERIOD	NAME OF THE PROJECT	BRIEF DESCRIPTION OF FINDINGS OR/AND RESULTS
Fall 2021	<i>Modeling the Price Wars: How spearhead stores' price changes affect a supermarket store system's equilibrium. A social network analysis.</i>	The research group integrated price indices for almost four hundred supermarket stores in the south region of Mexico, accounting for 2018. Then each store was confronted with the rest, using causal models (regression, CART) to estimate the effects of price change, using a lag ranging from 1 to 14 days. The 4-day lag was the most efficient. Results were used to display a network showing two types of stores: those with higher in-degree were cataloged as <i>spearhead stores</i> , and those receiving local effects from them were identified as <i>affected stores</i> . Multiple benefits in strategic and tactical actions emerged from these findings.
Spring 2021	<i>Construction of a model for predicting and describing employee attrition variables in a multi-national IT consulting company.</i>	Using data from 2019 to 2020, the research team revealed causes of employee attrition during the pre- and post-COVID-19 Pandemic. A set of ensemble models (Gradient Boosting, XBoost, and Ada Boost), traditional ML (Naïve Bayes, SVM, Logistic Regression and kNN), Balanced ML (Balanced Random Forest, RUSBoost) and Deep Learning Models (ANN) were used to develop the model. Relevant discoveries were that: 1) younger consultants and 2) those holders of "Prime Skills" (working knowledge in .net full-stack, Android, Banner/Ellucian and PMO Change Management abilities) would be more likely to leave the company. The team also developed an international comparison of results.
Fall 2020	<i>Development of Comprehensive Analytical Models for Understanding Customer Purchasing Behavior on the Web. The case of a metal-mechanic firm in northern Mexico.</i>	The research team developed a clustering exercise for current clients, identifying patterns and characteristics and a formal categorization for further use (from selectors to the effective buyer). Developed predictive and prescriptive models (logistic regression, KNN, SVM, decision trees, random forest, and Naïve Bayes classifier) to identify the causal factors that conduct and promote buyer behavior.
Spring 2020	<i>Design of Analytics model for Customer Dispatch Arrival Time estimation. The case of a metal-mechanic firm in northern Mexico.</i>	The team developed advanced predictive models (logistic regression, K-NN, Decision Trees, Random Forest, SVM -multi-kernel-, and regression models, -linear, Random Forest regressor, Support Vector

PERIOD	NAME OF THE PROJECT	BRIEF DESCRIPTION OF FINDINGS OR/AND RESULTS
		regressor-) for predicting the customer dispatch arrival time for a variety of routes and zones across the country. The team also developed a set of relevant indicators for improving the decision process of customer dispatch: road accident rate (for more than fifty roads in Mexico), delivery risk rate and climate index by region. The model allowed the development of better dispatch timing, routing, and vehicle type allocation decisions.
Fall 2019	<i>Development of analytical models for understanding customer behavior in a web service portal. A metal- mechanic firm in northern Mexico.</i>	As the first approach for understanding client behavior in a web-based platform for commercial transactions of a metal-mechanic firm, the research team designed a data-based route for clients. It developed a diagnosis of these consumer behaviors. The group intended four categories for current clients: <i>navigators, selectors, quotes, and buyers</i> . This new categorization and its implications allowed the discovery of new relations and factors for moving clients away from lower levels in the category and transforming them into actual buyers.
Fall 2019 (Cont.)	<i>Quality Information System for improving decision-making for a new product platform. Application for a white-goods producer in Northern Mexico.</i>	A new platform launch represents a challenge for white-line product producers, especially for capturing the performance of new devices in homes. This critical feedback is essential for quality control and the latest product line adjustment. The research team designed a new method for acquiring and communicating market information, gathering information from technical services visiting homes to repair or check products. Using current reporting systems, the research team developed a standardized categorization of failures and causes that simplified the interpretation of technicians about product defects and failures. In this way, the Quality control team received real-time feedback about product performance.
Spring 2019	<i>Implementation of Business Analytics models for preventing stock-outs in shelf space. A case for a retailer in Mexico.</i>	The research team used predictive modeling (logistic regression and other selection models) to find a set of factors causing shelf product stock-outs. As designers of new variables and users of current ones available, the group highlighted those factors relevant for planning and avoiding stock-outs, using replenishment and backroom decisions, and modeling relevant variables like promotional effects, in-store accommodation decisions and other external aspects.

PERIOD	NAME OF THE PROJECT	BRIEF DESCRIPTION OF FINDINGS OR/AND RESULTS
Fall 2018	<i>Development of a predictive model of safety risks for a manufacturing company in Mexico</i>	As developers of predictive modeling based on logistics regression and SVM, the research team found a set of relevant factors provoking hazardous activities in a manufacturing plant as direct sources of disabling work accidents.
	<i>National sales forecasting models for an agricultural industry company</i>	The research team studied the sales data series of 64 SKUs, which accounted for 80-20 of the total sales for Mexico. The team developed specific forecasting models for these products, ranging from traditional time-series analysis to sophisticated regression and ARIMA/SARIMA methods. Typical projected savings were calculated, and more detailed planning and inventory management were obtained.

ANNEX 7. BRIEF DESCRIPTION OF THE MINIMUM VIABLE BUSINESS (MVB) METHODOLOGY AND DEVELOPMENT PROGRAM FOR FOSTERING ENGINEERING ENTREPRENEURIAL VENTURES. SEE ALSO EXAMPLES OF CURRENT OPERATING START-UPS GRADUATED FROM THIS PROGRAM.








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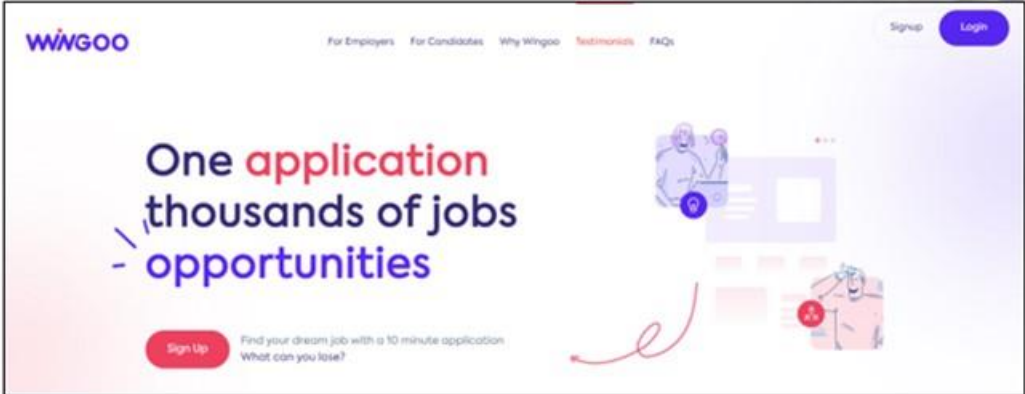
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