Gerardo Trevino-Garza, Ph.D.

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SUMMARY OF QUALIFICATIONS

- 30+ years applying Advanced Analytics, Operations Research and Computer Science techniques to solve real world problems.
- 30+ project implementations in Semiconductor, Manufacturing, Rail, Cement, Glass, Retail, Mining and Food industry.
- 25+ years of experience as IBM Optimization Software (CPLEX) user and developer.
- 25+ published papers and presentations in leading journals and conferences.
- 5 decades delivering advanced Optimization and IE coursework.

EDUCATION

Doctor of Philosophy in Industrial Engineering   **Aug 2005-May 2009**
Arizona State University, Tempe, AZ
> Major: Operation Research and Production Systems
> Minors: Supply Chain Management and Mathematics
> Dissertation: A Heuristic Approach for General 0-1 Integer Programming Problems

M.S., Computer Science   **Jan 1985-Dec 1986**
ITESM, Monterrey, N.L., México
B.S. Industrial and Systems Engineering   **Aug 1980-Dec 1984**
ITESM, Monterrey, N.L., México

COMPUTATIONAL SKILLS

- Expertise: Math Programming (Linear, Non-Linear, Integer), Advance Analytics, Heuristics
- Optimization: CPLEX: Callable Library, Concert Technology, Constraint Programming, OPL. GUROBI, Coin-OR, Frontline Systems, Excel Solver with VBA.
- Statistics, MiniTab.
- Simulation: Matlab, Maple, GPSS, PROMODEL, Anylogic, G2.
- Operating Systems: Windows, Unix, Linux.
- Computer Languages: C, C++, C#, VBA, Java, Python, Pascal, Cobol, Fortran.
- Ability to create Optimization and Analytics apps interfacing with any available computer language.
- Machine Learning/Data Science: Databricks, Google Colab

EXPERIENCE

- **Texas State University, San Marcos**   **August 2023 – Present**
  Visiting Associate Professor
- **Insight Global**   **March 2021 – August 2023**
  Senior BI Data Engineer
  - Prepare Infrastructure for Machine Learning and Data Science
    SAP, Databricks, SQL, Python, PowerBI
- **Intel Corporation**   **July 2019 – March 2021**
  Staff Engineer
  - Optimization (Production Scheduling: HME, Lithography)
    APIs: OPL, Visual Studio C#. Engine: CPLEX and Constraint Programming.

- **BNSF Railway Company**   **July 2013 – July 2019**
  Senior Operations Research Specialist (Optimization)
  - Analytics Projects: Crew Scheduling, Block to Train Assignment, Equipment Distribution, Fleet size.
  - Developed, validated, tested and implemented Heuristics and practical solutions to solve complex real-world problems.
  - APIs: Java (Eclipse), C++ and C# (Visual Studio), Solver: CPLEX.
- **TIS Consulting**   **July 2011 – July 2019**
  Consultant
  - Routics Project, Vehicle Routing Problem (VRP).
- **Aleph5 formerly ADATECH, S.A de C.V.**   **October 1990 - July 2010**
  Co-founder, IT Director
  - Models: Truck Scheduling in Cement Industry, Transportation, Communications, Cutting Stock, Blending, and Logistics.
  - APIs: Pascal, C, C++, C#, Excel VBA.
  - Solvers: CPLEX, Gurobi, Frontline Systems.
- **ITESM, Tec de Monterrey, Campus Monterrey**
  Research Professor during the last 5 decades (1985, 1987-1992, 1993, 2003-2004, 2010-2013, 2021-2023)
  - 30 semesters lecturing 80 Sections in Operations Management, Quantitative and Optimization Models, Decision-making Models, Systems Dynamics, Data Structures, Database Programming, Boolean Algebra.
  - 2500+ students, Percentile Top 75% (Academic Performance Survey).
  - Graduate Students Survey (since 2011): 181 mentions as excellent professor.
  - PhD Advisor
    - Main Co-Advisor, Leopoldo Eduardo Cárdenas-Barrón (Tec de Monterrey, PhD in Engineering Sciences - Industrial Engineering, 2015)
    - Advisor, Luis Muñoz (Arizona State University, PhD in Systems Engineering, 2021)

PUBLICATIONS
- https://www.researchgate.net/profile/Gerardo_Trevino-Garza
  - Skills: Optimization, Modeling, Heuristics, Math Programming, Discrete Mathematics, Scheduling, Logistics, Operation Management, Inventory Management.
  - 30 Papers (2012-2023).
  - 1,229 citations.

CERTIFICATIONS/SERVICE
- ITESM, Campus Monterrey (2012). PDHD (Lecture Skills Development Program).
- GUROBI, Beta Tester Version 3.4, Dr. Bixby invitation, 2010.
- CPLEX Callable Library V4.0 Incline Village, NV, October 1994.

AWARDS AND HONORS
- ITESM Campus Monterrey, Premio a la Labor Docente (Award for best academic performance), 2012.
- ITESM Campus Monterrey, Profesores que dejan huella (2018, 2023)
- CONACYT (Mexican Council for Science and Technology) Fellow, 2005 – 2009.
- CONACYT, SNI Level I (Mexican National Researchers Council), 2016-2018, 2019-2023.
- CONACYT, RCEA Technology Consultant. Evaluating project proposals (10-30/year) from companies who want to be granted. 2001-2013.

MEMBERSHIPS
- Alpha Pi Mu - Industrial Engineering Honor Society
- Omega Rho - Operations Research International Honor Society
- INFORMS.