JUAN TZINTZUN

https://juantztz.github.io

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EDUCATION

University of Alberta-Edmonton, AB, Canada *August 2020*
Master of Science in Engineering Management (Operations Research) Overall GPA: 3.4/4
Department of Engineering Management

University of Guadalajara-Guadalajara, JAL, Mexico *August 2016*
Bachelor of Science in Industrial Engineering Overall GPA: 86 /100
Department of Industrial Engineering

TECHNICAL STRENGTHS

Computer Languages	**Advanced**: Python; **Intermediate**: Julia, Sql
Software & Tools	LaTeX, SAP, Google cloud platform, Amazon web services, Gurobi, AMPL, Vrep, GitHub
Languages	Spanish (Mother tongue), English (TOEFL ibt)

RESEARCH EXPERIENCE

Panamerican University - Guadalajara, JAL, Mexico Jan 2021 - Sep 2021
Independent Research Collaboration *Advisor: PhD. Samuel Nucamendi Guillén*

· Development of algorithms for dynamic vehicle routing of vehicles with split load capabilities.

University of Alberta - Edmonton, AB, Canada Jan 2017 - Aug 2020
Graduate Research Assistant *Advisor: PhD. John Doucette , PhD. Rafiq Ahmad*

· Development of models and algorithms for pickup and delivery problems in robotic systems. Techniques and technologies: Linear programming, planning algorithms. Implementation in Python and Julia using Gurobi as a solver.

· Use of machine learning algorithms for time series forecasting on the Bike Sharing Dataset. Techniques and technologies: Support vector machines, k closest neighbors, neural networks, python-scikit-learn for model training, python-streamlit for visualization.

· Emergence of communications in multi-agent systems using deep reinforcement learning.

Concordia University - Montreal, QB,Canada Jun 2014 - Sep 2014
Undergraduate Research Assistant *Advisor: PhD. Masoumeh Kazemi Zanjani*

· Realization of a comprehensive literature review on the applications of operations research in health care management: Radiotherapy treatment design, the supply chain of blood banks, and nurse scheduling.

University of Guadalajara - Guadalajara, JAL, Mexico Aug 2012 - Dec 2013
Undergraduate Research Assistant *Advisor: PhD. Alejandra Gómez Padilla*

· Applications of the bin packing problem to minimize the risk of damage on pantries. The optimization problem was implemented using Lingo software.

TEACHING EXPERIENCE

University of Alberta - Edmonton, AB, Canada Sep 2018 - Dec 2018
Teaching Assistant *Professor: PhD. John Doucette*

· ENG M 540- Introduction to algorithms and Optimization. The main activity I performed was the grading of assignments.

INDUSTRIAL EXPERIENCE

Veritas Energía, S.A.P.I. DE C.V. , Tlajomulco de Zuñiga, JAL, Mexico   Jan 2020 - July 2020
Independent consultor

· Implementation of a spreadsheet-based decision support system for routing of trucks for natural gas distribution. Techniques and technologies: Linear Optimization, Clustering, Google Cloud (Google maps API). Small data set with an average of 250 customer request per day (from Jan 2020 to July2020).
· Deployment of a desktop application for automatic report generation. Techniques and technologies: PyQT5, web scraping, Python-Selenium.

Nypro Packaging - Guadalajara, JAL, Mexico   Nov 2014 - Mar 2016
Project Manager Assistant

· Support to different activities related to the management of industrial projects from clients such as: MABE, Otterbox, Unilever, P&G. Some of the main activities carried out were the introduction of new products, project planning, generation of and validation of the BOM, quotation of projects.

HONORS AND AWARDS

National Council of Science and Technology - Secretariat of Energy Scholarship for MSc (CONACyT-SENER) (2017-2019)

Mitacs Globalink Summer Research Internship (Summer 2014)

CERTIFICATIONS

Reinforcement Learning Specialization   2020
Coursera   *University of Alberta- Alberta Machine Intelligence Institute*

WORKSHOPS

13th Industrial Problem Solving Workshop/ Fin-ML/IVADO Workshop   2020
Invited   *Center for Research in Mathematics- Guanajuato, GTO, Mexico*

· A workshop intended to solve problems encountered in industry with the help of techniques, methods and tools related to Artificial Intelligence. I was invited to contribute on an algorithmic pricing problem implementation.

Workshop on Deep Learning and Data Science   2019
Participant   *Center for Research in Mathematics -Guanajuato, GTO, Mexico*

· A workshop on different topics related with deep learning and data science.

Research Computing Spring Bootcamp   2019
Participant   *University of Alberta-Edmonton, AB, Canada*

· High performance computing.
· Agent based modeling.

International Conference on Control, Mechatronics and Automation (ICCMA)   2017
Volunter   *University of Alberta-Edmonton, AB, Canada*

· Event facilitator.

International Student Festival in Trondheim (ISFIT) 2015
Participant *Norwegian University of Science and Technology-Trondheim, Norway*

· International forum about corruption.

International Student Week in Ilmenau (ISWI) 2013
Participant *Technische Universitt Ilmenau-Ilmenau, Germany*

· Forum on discrimination and inequality.

PREPRINTS / SUBMITTED

J.Tzintzun, T.Nakashima, J.Doucette, R.Ahmad, "Multi-vehicle traveling salesman problem with pick-up and delivery and split load constraints", (submitted to SN Operations Research Forum in December 2020)

J.Tzintzun, T.Nakashima, J.Doucette, R.Ahmad, "Formal methods for the general pick-up and delivery problem", (submitted to Journal of Intelligent and Robotic Systems in December 2020)

PUBLICATIONS

Jia F., Tzintzun J., Ahmad R. (2020) An Improved Robot Path Planning Algorithm for a Novel Self-adapting Intelligent Machine Tending Robotic System. In: Hernandez E., Keshtkar S., Valdez S. (eds) Industrial and Robotic Systems. LASIRS 2019. Mechanisms and Machine Science, vol 86. Springer, Cham.

CONFERENCES AND TALKS

8th International Conference on Production Research (ICPR) Americas 2016, "The bin packing problem applied to groceries distributed by a food bank", Valparaiso, VAL, Chile, 2016.

V Congreso Nacional de la Sociedad Mexicana de Investigacin de Operaciones (V SMIO),"An open vehicle routing problem with multiple depots, capacity constraints, and time windows.", Cd. Madero, TAM, Mexico, 2016.

XVII Latin-Iberian-American Conference on Operations Research (XVII CLAIO),"Organization of products in containers for distribution to families in poverty.", Monterrey, NL, Mexico, 2014.