

ALBERTO CORTÉS

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EDUCATION

Instituto Tecnológico de Estudios Superiores de Monterrey

Graduating in Jun. 2023

Bachelor of Science in Data Science and Mathematics

Zapopan, JAL

- Cumulative GPA: 94/100.
- Líderes del Mañana: **Full-Ride Scholarship** awarded for leadership and community impact.
- Relevant Coursework: Neural Networks and Deep Learning, Deterministic and Stochastic Optimization, Multivariate Methods in Data Science, Bio-inspired Algorithms.

EXPERIENCE

Data Engineer

Aug. 2021 – Present

Félix Pago

Zapopan, JAL

- Built a database holding almost **10,000** entries by developing **scraping** tools and optimizing them using **multi-threading** to reduce computation time from 17 to 8 hours.
- Analyzed demographic and marketing data to provide insights on future projects by applying **PCA** and **K-Means clustering** to reduce dimensionality and handle a large dataset in **3 component** dimensions.
- Optimized businesses process by migrating tools from spreadsheets to **Business Intelligence** tools.

University Engineering Intern

Jun. 2021 – Aug. 2021

Facebook Inc.

Zapopan, JAL

- Built various applications using **Java** and **REST APIs** of Twitter, Parse and TMDb.
- Developed a music recommendation app connected to Spotify's Web and Auth APIs.
- The app worked by finding the most present colors on a photo using **linear algebra** and extracting music genres from them based on the state of the art of sound analysis, achieving custom recommendations for each photo.

Deep Learning for Computational Geometry Intern

May 2019 – Sep. 2019

HP Labs

Zapopan, JAL

- Research and development focused on data processing to be fed to a **neural network**.
- Improved efficiency to tag data by optimizing geometric processes using less complex calculations done with **Python** and **Trimesh** lowering costs of memory in gb from **110 to 20** and time from **48 to 12** hours.
- Built tools to keep track of computations done to locate corrupt data.

PROJECTS

CVRP Delivery Optimization | Python, Jupyter, Google Cloud Console

Mar. 2021 – Apr. 2021

- Developed various scripts to clean and preprocess delivery data obtaining geographical coordinates and their distance matrix using the **Google Maps API**.
- Generated a set of optimal routes that reduces the total operation time for the day by **8 hours** and **doubles** the delivered packages per route using the distance matrix and demand vector by feeding them to the model built with **VRPy**.

ACTIVITIES AND LEADERSHIP

Team Founder and Mentor | Arcadia Robótica 6608

Jan. 2016 – Jan. 2020

- Secured a **\$9,000 USD** fund to kick-start the team with a sponsoring foundation through email outreach, which allowed the 17 original members of the team to compete in the regional event of **FRC**.
- Continued as team member for 4 years, leading the **CAD** team reaching a maximum of 20 students.

TECHNICAL SKILLS

Languages: Python, C/C++, Typescript, JavaScript, HTML/CSS, Java, R

Development Tools: Git, Colab, VSCode, Spyder, Google Cloud Console

Libraries: Pandas, NumPy, SKLearn, SciPy, Keras, Matplotlib, Trimesh