Victor J. **Sequi** Sierra

Leeds, UK | 07907972329 | vjsequi@gmail.com | https://www.linkedin.com/in/victorsequi/ | https://vjsequi.github.io/

Summary

Victor's latest professional experience was as a Senior Transport Data Analyst at Citi Logik, a transport analytics company that derived most of its insights from Mobile Network Data (MND). In his role, Victor engaged in a wide range of activities such as developing new data-driven products, improving the current algorithms and gaining insights from data. He also took part in client engagement meetings, played a role in organising the analysts' team and supervised and mentored junior analysts. He worked daily with data engineers, front-end developers and product managers. The high demands of his position exposed him to a broad set of problems and situations that he was able to solve through reasoning, research, pragmatism and hard work. The area of expertise that he is most appreciative of is finding and designing solutions that bring insights from data and are useful to make informed decisions in the world.

Key skills

Data Science, Data Analysis, Machine Learning, Probability and Statistics, Python, SQL, Pyspark and AWS.
Collaborative work, Leadership, Proactiveness, Communication, and Documentation.

Professional experience

Since April 2021
Citi Logik - Senior Transport Data Analyst - Research, Development & Operations. Extract, structure and present all the information contained in MND.

Products:

Electric Vehicles Charge Point Insights and Forecast

Victor developed the methodology and code of the PySpark data pipeline that took MND-derived journeys to provide insights on EV trips, visits, and dwellings. These were used to evaluate potential charge points.
The product included a machine learning forecasting model that Victor developed. It was trained using MND traffic as input and known utilisation as a target. This was one of the top-selling products CL offered.

Locations Insights

Similarly to the Electric Vehicles product above, Victor designed the end-to-end PySpark data analysis pipeline. The product provided insights on trips, visits and the dwellings that a point of interest, or area, received over the course of a period.

Detailed Traversing Insights Research

Victor conducted research to develop a methodology to provide detailed traversing trip insights. The methodology was based on using MND observed traces and road link network analysis to derive traversing traffic characteristics for each main-road road link in the UK.

Conventional Transport Projects

Victor took part in the delivery of trip demand matrices for conventional transport planning projects where an area was defined and people-trip-OD matrices with purpose, mode and time-period were calculated for use in demand modelling. This type of projects were handled almost exclusively in SQL.

Tools:

Expansion, From Device to Population

A breakthrough development was made by Victor when he redeveloped the expansion methodology. The new methodology improved the reliability, reproducibility and speed of the expansion process while making it completely hands-off. This made all the other projects feasible from a technical and business perspective.

Active Mode Detection

Victor undertook a complete review of the active mode detection algorithm, which greatly improved its performance. The new methodology used National Travel Survey data to fit behavioural trip models that could identify whether an active mode of transport (walk and cycle) was used on an observed trip.

Zone System Creation

The new products required a hands-off zone system creation tool that would create an ad hoc geographical zone system for any point of interest in the UK. Victor successfully undertook the task of coding such a tool in Python.

Cell to Zone Conversion

The new products required a much higher geographical granularity to have meaningful results. Victor developed a new cell-to-zone conversion methodology that greatly increased the granularity of MND-derived trips.

Optimal Catchment Area

When studying a point of interest a catchment area has to be defined for trips and visits to be captured. Victor designed a Python tool that studied the cell density covering an area and allocated the optimal catchment radius.

Demographics

Victor worked on exploring solutions that could provide demographic information for trips and visits. He supervised junior members of the team on the use of classification algorithms that could detect and use behavioural trip-making differences between demographic segments.

May 2016 to April 2021
AECOM - Consultant Transport Planner - Model Development and Research (St Albans/Bedford). Build transport models, research and evaluate transport-related data

COMET enhancement for JAQU, Hertfordshire County Council

Victor undertook the adaptation of the COMET hierarchical multinomial logit model. This model aimed at forecasting the variation in demand due to cost-motivated choices after a cordon toll was imposed. The agents modelled could be divided into air quality compliant and non-compliant vehicles,

Victor J. **Sequi** Sierra

Leeds, UK | 07907972329 | vjsequi@gmail.com | https://www.linkedin.com/in/victorsequi/ | https://vjsequi.github.io/

residents and non-residents and the different trip purposes. Several air-quality interventions in future-year scenarios were assessed to help decide the best course of action for the council.

UTG Bus boarding/alighting model - UTG
Develop an alighting bus model able to estimate the alighting points based on card swipes at boarding. Participate as a transport consultant on the product development of the model.

Journey time routes processor - AECOM
Take part in the development and user support of a tool able to process large quantities of data in order to estimate car journey times.

SATURNpy a Python package - AECOM
Development of a Python package that eases everyday tasks for the transport planner. Specifically focused on SATURN, it helps with data extraction, data input, data visualization and model runs.

A428 Black Cat to Caxton Gibbet traffic model Stage 3 - H. E.
A long-lasting project where Victor developed the trip-end model, improved the pre-ME matrices, developed the construction models on SATURN, carried out the construction economic assessment, participated in writing DCO standard reports, and answered stakeholders' queries.

Software and programming languages

Python: Victor uses python every day for data analysis, algorithm design and ML. The main packages he uses are pandas, PySpark, geopandas, NumPy, Scipy, scikit-learn, matplotlib, seaborn, bokeh, folium, dask and networkx. He has some but limited experience using Pytorch, Tensor Flow and keras.
SQL: Victor has used Microsoft SQL Server Management Studio and AWS Athena SQL.
Git: Victor uses git every day for version control of repositories shared with the data engineering team and version control of analytics tools and research.
Others: R, VBA, Excel, PowerShell, DOS and ArcGIS

Education

2021 **MITX:** Machine Learning with Python - From Linear Models to Deep Learning.

2019 **ColumbiaX:** MicroMaster in **Business Analytics**
Modules:
Data, Models and Decisions in Business Analytics; Analytics in Python; Demand and Supply Analytics; Marketing Analytics.

2009-2015 **UPM** *(Universidad Politécnica de Madrid)*: **MEng** six-year degree in **Civil engineering.** Graduation **grade**: "Notable" **(2.1)**
Modules:
Linear algebra, Calculus, Mathematical analysis, Mathematical methods for technology, Partial differential equations and numerical analysis, Probability and Statistics, Economy, Transport, Transport economics, Business administration, and Transport planning.

1997-2009 **Access to University Exams (A levels);** Physics (9.5/10), Mathematics (9/10), Technical drawing (8/10)

Licenses & Certifications

2019 **Data Camp - Data Scientist with Python.** *Number*: 100,610. statement of accomplishment
2015 **PMI - CAPM** (Certified Associate in Project Management); *CAPM Number*: 1785304

Additional information

Soft Skills: Excellent reporting, organisation, collaboration, and communication skills. Able to lead and be led. Outstanding at learning new concepts and adapting to new environments.
Languages: English and **Spanish**

Interests and hobbies

Data Science, Analytics, Finance and Business Administration, Psychology, Music, Calisthenics, Water-polo and Travelling.