

George Cubas
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George Cubas

SUMMARY

Software engineer with 5 years of experience and a strong passion for software development. Experienced in large scale projects utilizing cross-functional team collaboration. Skilled in AI, ML Web App and API development along with proven soft skills.

TECHNICAL SKILLS

Python, OOP, Django, Pandas, Numpy, Selenium, BeautifulSoup, Docker, Flask, Matplotlib, SciPy, PyTorch, Keras, Apache Spark, REST, Ruby, JavaScript, TensorFlow, Scikit-learn, ArcGIS, Git, TA-Lib, SQL Server, Jupyter Notebook Arcpy, Excel, API, Boto3 AWS, C#, Fortran, R, VBA

PROFESSIONAL EXPERIENCE

University of Virginia

March 2022-Dec 2022

Python Developer

- Generate programs for ETL process for Office of Sponsored Programs.
- Utilize Pandas , nosql and sqlalchemy to streamline the ETL process for Awards, Proposals and agreements data for full end to end Project implementation using analysis, design, modeling and testing for server side scripts and applications.
- Build a crawler to verify the quality of the frontend data and see what percentage of data needs to be corrected
- Use Pandas to generate various reports to replace specific reports previously generated using qlikview
- Use Multiprocessing(bypassing GIL) and asyncio modules when applicable for parallelization/concurrent performance in various scripts.

Kinstone Investment Properties

July 2019 - March 2022

Python Developer

- Model valuation and acquisition of new properties using Pandas, NumPy and Sci-kitlearn in Jupyter Notebook.
- Utilize BeautifulSoup and Selenium to scrape Freddie Mac Multi Family Index information and Case Shiller Housing Price index information adjusted for real inflation. Construct Bridge API's to schedule updated cost valuations for properties in certain areas of Houston using the Zillow API.
- Apply Monte Carlo Analysis using NumPy for building a real time and cost estimate for predicting a Levered and Unlevered IRR.

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Mass Action Engineering

January 2019- July 2019

Software Engineer (contract)

- Responsible for the Basis of Design for the production of Polyvinylidene Fluoride Polymer and co polymers.
- Created Python scripts for processing all P & ID's and PFD's .
- Designed a process calculation utilizing NumPy, Pandas and Jupyter Notebook. The scripts were modularized to have each unit process within its own class using OOP principles.
- Utilized data structures such as Dictionaries and key value pairs consisting of arrays, or nested dictionaries for each unit process for storing the results across each unit.
- Built a Pandas Data Frame using dictionary to df and then exported to Excel for rendering. The algorithms used for balancing each unit operation were selected on a case by case basis including both linear and dynamic algorithms.
- Worked with a tech team to effectively simulate the Free Radical Emulsion Polymerization of the monomer Vinylidene Fluoride.

Occidental Petroleum

January 2017 - January 2019

Software Engineer

- Planned various Field Development and Section Development plans in NM and TX areas.
- Built an Anti-Collision Risk Analysis Web application using Django Framework that calculated the risk between Planned Well Spreadsheet and Existing wells.
- Created a script that used a pretrained Neural network to extract Scanned Well File Data to a csv using a Linux shell script.
- Built scrapers using beautifulsoup4 and Selenium.
- Designed a drilling web application using Django and a machine learning algorithm that modeled drawdown for Production using Scikit-learn.
- Designed most programs using Python, some JavaScript, the Django framework, and the modules NumPy, Pandas and scikit-learn. All Python code was written using OOP principles and applying the necessary algorithmic approach on a case by case basis.
- Developed models using ArcGIS, Python, Arcpy, SQL, Excel, Powerpoint.

BP Alaska

January 2013 - Dec 2016

Drilling and Completion Engineer

- Supervised and managed the daily drilling operations in various roles. Managed teams of 30+ people and projects in excess of \$20MM.
- Designed and executed a side track of 5000' with a pop rate of 100,000 bbl/day as a Operational Drilling Engineer.
- Designed and executed Rig Workover wells in dynamic Pressure zones

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PROJECTS

Trading Backtester Ribbon Strategy

[<https://github.com/mateBarey/Trading-Backtester-Ribbon-Strategy>]

A Crypto Trading program that uses a Ribbon Moving Average Strategy to trade

- Utilized Binance Rest API, TA-Lib, NumPy Python Modules.
- Program uses Exponential Moving averages (8,13, 21 and 55) to find a buy signal and sell signal.
- Inputs are time frame, from and to dates for backtest, and trading pair.
- 30% Profitable trades with a 200+% ROI.

Apache Spark Prediction Pipeline

[<https://github.com/mateBarey/Apache-Spark-IOT-Prediction-Pipeline>]

Weather IOT data is cleaned using PySpark SQL and vectorization, a correlation matrix built to check for independent variables and then a train and test dataframe is split by 0.8 and .2, the models are then built using a train_df to predict a label called "HOURLYPresureTendency"

- Coded in Python using Jupyter Notebook.
- Utilized Apache Spark for building a machine learning pipeline and training/testing data.
- Predictors used were (Linear Regression, Gradient Boosted Tree Regressor, Logistic Regression, Random Forest Classifier and a GBT Classifier).

Actor Critic Reinforcement Learning NN

[<https://github.com/mateBarey/Reinforcement-Learning>]

A Reinforcement Algorithm that uses an Actor for finding the best Policy and Critic for finding the best Probability associated with each action to take in order to solve the Cart Pole Problem

- The program is written in Python using the PyTorch Module for creating Neural Networks.
- It has 2 hidden layers with 2 neural nets (NN) for both actor and critic and 512 neurons in each.
- Uses Relu Activation functions.
- It maximizes reward by taking the -log of the probabilities of its action multiplying it by the change in state plus its reward and then taking the gradient to adjust the NN weights through backpropagation.

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Drilling Anti Collision Web App

[<https://github.com/mateBarey/SF-Drilling-Well-Calcs>]

A Web app that uses 2 inputs: Well Inventory File and a Planned Well File to generate a Risk Analysis.

- Coded in Python utilizing the Django framework.
- Incorporated SQLite3 database.
- Incorporated User login security & authentication.
- App calculates a 2xSF and flags wells that have a 2xSF greater than the center to center distance.
- App populates a SQL database with Risk analysis information for flagged wells.
- App renders an Excel Spreadsheet visualization for all well data generated.

DB as a Rest API

[<https://github.com/mateBarey/DB-as-a-Rest-API-using-Flask>]

A Database as a Rest API using Flask that allows users to register and get tokens, a token is taken away when a sentence is stored and then retrieved

- Coded in Python using the Flask framework.
- Utilized RESTful architecture.
- Integrated a NoSQL database which allowed for a dynamic schema and linear scalability.
- Utilized Docker Containerization

LANGUAGE SKILLS

English, Spanish, Portuguese, French

EDUCATION AND CERTIFICATION

Masters in Environmental Engineering - TUHH/ Hamburg University of Technology

Bachelor of Science, Chemical Engineering - University of Houston

IBM - AI Engineering Professional Certificate

Google Cloud - Machine Learning for Traders Certificate

Le Wagon - Coding Boot Camp