

# PHYSICIST OSVALDO ROSALES PÉREZ

Software and Blockchain Engineer, problem solver, continuous learner and passionate about building a decentralized future on top of Bitcoin, the Lightning Network ⚡ and the latest in Blockchain technology.

## CONTACT





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📺 [Osvaldo Rosales | Physics Stories](#)

## SKILLS

### 🗣 Languages

Spanish Native language  
English C2, Full professional proficiency  
French C1, Fluent

### </> Programming Languages

Python   
SQL   
Javascript   
Solidity   
Swift | C | Bash | SQL | React | LaTeX

### 🔧 Software Tools & Libraries Experience

Machine Learning, AI & Data extranction  
OpenCV, Keras, TensorFlow, SciKit-Learn,  
Tesseract OCR Engine, Scrapy Web.

Data Analysis and Visualization (Python)  
Numpy, Pandas, SciPy, StatsModels, Matplotlib, Seaborn.

### Web Backend

Django, Flask, NodeJS, MySQL, PostgreSQL.

### Bitcoin & Lightning

BitcoinDevelopmentKit, python-bitcoinrpc,  
BitcoinJS, IbexHUB API.

### Bitcoin Node Management

MyNode/RaspiBlitz, LNBits, RTL.







### Ethereum & Polygon

Python Brownie Framework, Ganache,  
Remix, OpenZeppelin, Web3JS, Infura.

### CI/CD | Monitoring

Docker and Docker Compose, AWS,  
Jenkins, New Relic.

### x<sup>2</sup> Highly proficient in mathematics

Probability and Statistics   
Numerical Simulations   
Differential Equations   
Quantum Mechanics   
Advanced Calculus   
Linear Algebra 

## ⚙ EXPERIENCE

📅 02/2022 - Present

📍 [CryptoMX](#), Tijuana, México

### Blockchain Consultant (Remote)

- Developed Solidity smart-contracts for ERC-721 NFTs and Royalties Splitters, tested and deployed on Ethereum and Polygon networks with the Python Brownie Framework and Truffle.
- Assisted on the creation of online educational content and courses about Bitcoin, Ethereum Smart-Contracts and NFTs.

📅 08/2021 - Present

📍 [MedTrainer](#), Queretaro, México

### Senior Platform Engineer (Remote)

- Lead the newly established Python Automation Team from initial proposal and architecture design to the final delivery of an Automation Microservices Platform for on-demand data retrieval and web scraping of several US-States medical professional licensing websites.
- Maintained constant communication and collaboration with the company CTO, DevOps and frontend departments about the projects design and implementation.
- Transformed each data validation task from 1 employee-hour to 1 automated-minute.
- Established standards for good practices in python microservices and test-driven development as well as standards for Detailed Documentation and Templates for future projects.

📅 02/2021 - 08/2021

📍 [Arkus Nexus](#), Tijuana, México

### Machine Learning Engineer (Remote)

- Developed Machine learning models for patter recognition and text extraction from images implementing Keras, OpenCV and Tesseract OCR Engine. This models were served through a Flask API and triggered as Celery asynchronous tasks on AWS with a RabbitMQ message broker.
- Supported other Django and Flask web projects within the company.

📅 01/2019 - 02/2021

📍 [Grupo Molecular](#), Tijuana, México

### Financial Researcher

- Lead a team of developers and financial analysts on the design and delivery of a Financial Analysis Platform that fetched and analyzed real-time foreign exchange data from various APIs implementing Django REST Framework, PostgreSQL database, Celery asynchronous tasks on the backend and NodeJS+ReactJS on the frontend.
- Developed Monte Carlo simulations and Machine learning models for time-series forecasting and pattern recognition implementing Long-Short Term Memory Models and Convolutional Neural Networks.
- Delivered statistical data analysis and visualization of experimental results in different research projects with Python tools.

## ₿ BITCOIN & PERSONAL PROJECTS

🔗 - Bitcoin-Lightning IOS Wallet [\[Link\]](#): Developed a prototype for a non-custodial, descriptor-based IOS Bitcoin wallet, implementing the BitcoinDevelopmentKit, connecting to my own Electrum server for Blockchain data and successful transaction broadcast on mainnet. Also added Lightning Payments functionality through the IBEXHub API Service.

🔗 - Chaotic Attraction Numerical Simulation [\[Link\]](#): Developed a 3D interactive experience to touch and play with the Butterfly Effect. The numerical simulation runs in the browser, continuously solving a Lorentz System of differential equations. Deployed to IPFS.

## 🎓 EDUCATION

📅 2014 - 2019

📍 [Universidad Autónoma de Baja California](#),  
Science Faculty, Ensenada, México.

### Degree in Physics

📅 2017 - 2018

📍 [Université Claude Bernard Lyon 1](#),  
Faculté des Sciences et Technologies, Lyon, France.

### Academic Exchange