

# PHYSICIST OSVALDO ROSALES PÉREZ

Software Engineer, Data scientist, continuous learner and passionate about the intersection of Bitcoin, AI and Physics Simulations.

## CONTACT

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📺 Oswaldo Rosales | Physics Stories  
📍 Pacific Standard Time UTC-08

## SKILLS

### 📚 Languages

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

### </> Programming Languages

Python  
Javascript / Typescript  
C  
Swift | Solidity | LaTeX

### 🔧 Software Tools & Libraries Experience

#### Data Science

Numpy, Pandas, SciPy, StatsModels, Matplotlib, Seaborn, scikit-learn, Scrapy

#### AI Deep Learning

Tensorflow, Keras, Pytorch, OpenAI API, OpenCV, Tesseract OCR, AWS Rekognition

#### Bitcoin & Lightning

BTCPay Server, BitcoinDevelopmentKit, Mempool, IbexHUB API, python-bitcoinrpc, BitcoinJS, WebLN.

#### Bitcoin Node Management

Voltage, MyNode/RaspiBlitz, LNBits, ThunderHub, Amboss, Polar

#### Web Backend

FastAPI, Django, Flask, SQLite, PostgreSQL, GraphQL, RabbitMQ, Redis.

#### Cloud | CI/CD | Monitoring

Docker, AWS, Azure, Vercel, New Relic, OpenTelemetry

#### Electronics

Raspberry Pi, Arduino, Texas instrument Launchpad MSP430, 3D printing.

### ✖️ Highly proficient in mathematics

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

## ⚙️ EXPERIENCE

📅 08/2021 - Present

📍 [MedTrainer](#), Queretaro, México **Senior Platform Engineer (Remote)**

- Lead the **Python Automation Team** in over 15 automation microservices from initial proposal and architecture design to the final delivery to our 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 several 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.

📅 10/2021 - 05/2022

📍 [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**.

📅 02/2021 - 08/2021

📍 [Arkus Nexus](#), Tijuana, México **Machine Learning Engineer (Remote)**

- Developed **Deep 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**

- Trained Deep 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 research projects.
- Lead a team of researchers and **financial analysts** on the design and delivery of a **Financial Analysis Platform** that analyzed real-time **foreign exchange** data from various sources implementing **Django**, **PostgreSQL** and **Celery asynchronous tasks** on the backend.

## ₿ BITCOIN & PHYSICS PROYECTS

🔗 - **Forever In Bitcoin [Link]**: Bitcoin ordinals inscription service where you can upload text and images into the most secure, decentralized and immutable blockchain ever. Bitcoin and lightning payments accepted.

🔗 - **Bitcoin-Lightning IOS Wallet [Link]**: **Non-custodial** IOS Bitcoin wallet, connects to an **Electrum server** for Blockchain data and successful transaction broadcast on mainnet. **Lightning Payments** functionality implemented through the **IBEXHub API** Service.

🔗 - **Chaotic Attraction Numerical Simulations [Link]**: Interactive 3D Physics simulations of the butterfly effect to showcase the beauty of chaotic systems of equations. Deployed on IPFS, minted as ERC-721 tokens.

## 🎓 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**