PHYSICIST OSVALDO ROSALES PÉREZ
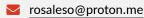
Software Engineer, continuous learner and passionate about building a decentralized future on top of Bitcoin, the Lightning Network ⚡.

CONTACT

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- 💼 Osvaldo Rosales
- ▶ Osvaldo Rosales | Physics Stories

SKILLS

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

</> *Programming Languages*
Python ●●●●●
Javascript / Typescript ●●●●○
HTML / CSS / React ●●●●○
Swift | C | Bash | SQL | Solidity

🛠 *Software Tools & Libraries Experience*
Web Backend
Django, Flask, NodeJS, Express, PostgreSQL, MongoDB, GraphQL, RabbitMQ, Redis.

CI/CD | Monitoring
Docker and Docker Compose, AWS, Jenkins, New Relic.

Bitcoin & Lightning
BitcoinDevelopmentKit, IbexHUB API, python-bitcoinrpc, BitcoinJS, WebLN.

Bitcoin Node Management
MyNode/RaspiBlitz, LNBits, RTL, Voltage.

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.

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

x^2 *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 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.

📅 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 **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 asyncronous 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 asyncronous 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**