Nadina (Oates) Zweifel

nadinaoates@gmail.com | (616) 589-2729 | Chicago, IL | linkedin.com/in/nadinaoates | nadinaoates.com

BLOCKCHAIN DEVELOPER

- Continuous learner and versatile blockchain/web developer with a strong business mindset and a passion for Crypto, NFTs, DeFi, and Web 3.0.
- Self-motivated project manager with strong communication skills and the ability to independently tackle complex problems and convert them into successful products, as evidenced by a public software package and several web3 applications.
- Cross-functional collaborator with strong analytical and problem-solving skills resulting from 6+ years of experience in data analysis and modeling, machine learning and AI, as demonstrated by 3 widely read publications and a research progress award.

CORE COMPETENCIES

JavaScript / TypeScript	Python / C++	Data Analysis	Crypto / NFTs / DeFi
Node.js / Nest.js / Next.js	PyTorch / Scikit-Learn	Machine Learning	Smart Contracts
React / HTML / CSS	Cloud Services (AWS)	Deep Learning	Solidity / Ethers.js / Hardhat

WORK EXPERIENCE

Blockchain/Full Stack Developer

Self-employed

May 2021 - Present

- Implemented and deployed an ERC20 contract with reflections collecting transaction taxes and redistributing tokens back to users. The contract improves gas efficiency and readability compared to previous implementations.
- Designed and developed an NFT minting dApp including the testing and deployment of two smart contracts based on ERC721A and ERC20 standards using Hardhat, Ethersjs, NextJS/React, and TypesScript.
- Conceptualized and delivered a web3 betting platform, taking it from ideation to production leveraging NextJS/React and NestJS with TypeScript to ensure top-tier performance.
- Directed the development of decentralized applications (dApps), collaborating with development partners to successfully introduce an NFT marketplace and a decentralized exchange.

Research Engineer / Computational Scientist

Northwestern University, Evanston, IL

September 2016 – April 2023

- Lead and managed 3 research projects from idea to scientific discovery including data collection, analysis, and documentation resulting in 3 publications, 27 citations, 3 talks and 5 public presentations.
- Collaborated closely with fellow researchers to acquire experimental data for optimizing model parameters, leveraging a high-performance computing cluster, and ultimately validated model accuracy through advanced statistical analysis, leading to the release of full software package and a research progress award.
- Successfully implemented a dynamics model with a new approach using an open-source physics library, resulting in a 53% increase in model accuracy and efficiency compared to previous models.

- Proactively revived a dormant research project, independently collecting new data and using an innovative approach to process 3D imaging data for advanced statistical analysis, which received recognition by high-impact researchers.
- Evaluated and analyzed machine learning algorithms and higher-order statistics for feature extraction from large datasets resulting in new scientific discoveries.
- Mentored and provided guidance to 3 Master's level students resulting in 3 thesis manuscripts and 3 successful graduations.

Data Science Intern

Shure Incorporated, Niles, IL

June 2021 – August 2021

- Developed and tested deep learning models including the management of data storage and training on Amazon Web Services resulting in the company's first synthetic voice generation model.
- Led the design and execution of acoustic simulations including collaborating with engineers across various teams.
- Documented and presented proof of concepts to management and company executives.

PERSONAL PROJECTS & INTERSTS

YouTube Channel @N0_crypto

- Reviews of different crypto and web3 projects yielding 150+ subscribers and 3500+ views.

Oates Talk Crypto

- Co-founder and active member of the community "Oates Talk Crypto" with 100+ members that is dedicated to bringing Web3 adoption to the masses through education and technical support.
- Planning and organizing crypto events with the goal of building a web3 community in Chicago.

CERTIFICATES

Encode Solidity Bootcamp

- Completed 8 weeks of bootcamp covering web3 frontend, backend, and smart contract development.
- Completed multiple web3 dApps including a token ballot, a lottery, and a betting dApp.

EDUCATION

PhD in Biomedical (Neural) Engineering

Northwestern University, Evanston, IL

Master of Science in Engineering

Grand Valley State University, Grand Rapids, MI

Bachelor of Science in Engineering

Zurich University of Applied Sciences, Switzerland

PUBLISHED SOFTWARE

WHISKiT Physics Simulator (2021) A research simulation tool that implements a physics model to simulate the mechanics of rat whiskers based on custom code and the Bullet Physics Library, written in C++.
Code: https://github.com/SeNSE-lab/whiskitphysics

PEER-REVIEWED JOURNAL PUBLICATIONS

Zweifel NO, Bush N, Abraham I, Murphey T, Hartmann MJZ (2021) A dynamical model for generating synthetic data to quantify active tactile sensing behavior in the rat. *Proceedings of the National Academy of Sciences* Jul 2021, 118 (27) e2011905118; DOI: 10.1073/pnas.2011905118

Zweifel NO, Solla SA, Hartmann MJZ (2022) Statistical characterization of tactile scenes in three-dimensional environments reveals filter properties of somatosensory cortical neurons. *Nature Communications (in review)* Preprint: https://www.biorxiv.org/content/10.1101/2022.08.03.502632v1

My complete publication record can be found on Google Scholar.