Joseph-André Turk

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SUMMARY Solidity and Web3 developer with expertise in Machine Learning and Data Science.

Professional Experience

Web3 developer 2021 - Today
Built an NFT Marketplace from scratch using Hardhat, Solidity, TailWind CSS and NextJS framework. Code is available on my GitHub.

Solved the Damn Vulnerable Defi CTF challenges to learn security best practises. Code is available on my GitHub with a blog post on Medium detailing the solutions.

Senior Data Scientist January 2018 - November 2021
Iktos, AI applied to medicinal chemistry, Paris - France

- Implementing machine learning models on graph-structured data. Designing an automated pipeline for model selection and uncertainty quantification.
- Comparison of generative models (reinforcement learning and evolution strategies) for multi-objective optimization. Quality diversity and curiosity algorithms to improve the exploration of the chemical space. Batch active learning.

Research Assistant June 2017 - November 2017
Sanofi Aventis Research Center, Chilly-Mazarin - France

- Proof of concept on deep generative models for creating new molecules.

Education

2022: Solidity and Web3 bootcamp with eattheblocks.com.

2013-2017: Master degree in Applied Mathematics at Ecole Polytechnique in France. Courses in Mathematics, Computer Science and Physics.

2010-2013: Preparatory class at Lycée Saint Louis in Paris : intensive courses in Maths, Physics and Chemistry in preparation for the entrance exams to the French engineering Grandes Ecoles.

Skills

Programming:

- **Web3 development** Solidity, Hardhat, Truffle, Brownie, Foundry, Remix IDE and security tools such as Slither, Echidna, Certora.
- **Web2 development** HTML, CSS, JavaScript, Typescript, NodeJS, ReactJS, NextJS, Flask, FastAPI.
- **Data Science** Python, PyTorch, Scikit-Learn, MATLAB, R.

Mathematics: Statistics, Probability theory, Calculus, Cryptography, Theoretical Computer Science.

Languages: French (native), English and Arabic (professional working proficiency).

Publications

TURK, Joseph-André, GENDREAU, Philippe, DRIZARD, Nicolas, et al. *A Molecular Assays Simulator to Unravel Predictors Hacking in goal-directed molecular generations.* 2022.

VOLKOV, Mikhail, TURK, Joseph-André, DRIZARD, Nicolas, et al. *On the Frustration to Predict Binding Affinities from Protein–Ligand Structures with Deep Neural Networks.* Journal of Medicinal Chemistry, 2022.