# APE HEX
## Fullstack Developer ~ Engineer

Curious, attracted by technical challenges.
Reverse engineering black-box models.

**CONTACT**
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**ME**

**LANGS**

| | |
|---|---|
| **English** | Bilingual (TOEFL, TOEIC). |
| **French** | Native. |
| **German** | Rusty. |

**SKILLS**

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| **Coding** | C++, Python, Rust, Shell, Solidity, etc. |
| **Data** | DBMS, SQL, Numpy, Parquet, etc. |
| **ML** | Keras, PyTorch, Tensorflow, etc. |
| **Ops** | ONNX, YARA, Ansible, hooks, etc. |
| **Science** | Matlab, Octave, SciPy, SymPy, etc. |
| **Security** | Burp, Foundry, Ghidra, Nmap, etc. |
| **Web** | CSS, HTML, JS, Django, Node, etc. |

**HOBBIES**

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|---|---|
| **Games** | Board and video games. |
| **Science** | Math, science fiction. |
| **Sports** | Biking, climbing, mountaineering. |
| **Tech** | CTFs, research. |

## AI / ML

**MACHINE LEARNING RESEARCHER** — INDEPENDENT — 2024-01 – present
Unified image and language generation with a latent diffusion framework operating on bytes.
Created the composite embedding and binary prediction layers, outperforming tokenization.
Experimented with byte-level modeling: decompilation, transactions, ASCII art, text diffusion, etc.

**DATA ENGINEER** — AFTERQUERY & ALIGNERR & PALISADE — 2025-09 – 2025-12
Translated my experience into complex training tasks for LLM agents, in Docker containers.
Identified misalignment behaviors leading agents to execute forbidden scripts and transactions.

## SECURITY

**SECURITY RESEARCHER** — FORTA NETWORK — 2023-07 – 2024-01
Anticipated emerging hacking techniques during an in-depth survey of obfuscation techniques.
Developed specialized monitoring bots that detected numerous malicious transactions.

**PROTOCOL DEVELOPER** — DIADATA & RESERVE PROTOCOL — 2023-04 – 2023-06
Developed plugins to integrate protocols and guarantee over-collateralization in Reserve-Protocol.
Developed a daemon to monitor oracle health and accuracy for DIAdata.

**BLOCKCHAIN TRAINING** — OPENZEPPELIN + CTF — 2023-01 – 2023-03
Honed my skills through practical engagements in CTFs like Ethernaut and Damn-Vulnerable-DEFI.

**BUG BOUNTY RESEARCHER** — INDEPENDENT — 2020-03 – 2021-12
Identified and resolved vulnerabilities in a variety of mobile apps and websites.

**CYBERSECURITY TRAINING** — CYBRARY + COURSERA — 2020-03 – 2021-10
Extensive training in cybersecurity, including CTFs (Hackerbox, Pentesterlab, OverTheWire).

## CODING

**OPEN SOURCE CONTRIBUTOR** — INDEPENDENT — 2015-01 – present
Contributed PRs / issues to widely used projects: Keras, T-Bench, Transformers, etc.
Developed and shared a range of articles, models, datasets, tools, web and LaTeX templates.

**FULLSTACK DEVELOPER** — INDEPENDENT — 2017-01 – 2022-12
Translated expert insights into accessible tools, linking high-level decisions and technical execution.
Modernized applications with web interfaces and AI integrations, enhancing UX and efficiency.

## ENGINEERING

**ENGINEERING CONSULTANT** — C3-EXPERT — 2012-09 – 2016-12
Enhanced technical tools, with more accurate and efficient industry-specific calculations.
Conducted technical studies and simulations of plants for Arcelor, Koniambo Nickel, etc.

**ENGINEERING INTERN** — TOTAL — 2012-01 – 2012-06
Documented, debugged and reworked a critical framework for optimizing chemical mixing.

**M.S. IN GENERAL ENGINEERING** — ECOLE CENTRALE DE LYON — 2008-09 – 2012-10
Specialization in business development and data mining.

## LINKS

**MACHINE LEARNING**
LLM cleaning app - WIP.
Bypassing LLM safeguards with latent prompt crafting - WIP.
Image diffusion on fractal text - Encoding text as RGB in 3D space to perform image diffusion.
This title is already tokenized - Leveraging the hierarchical language representation of Unicode.
Tokenization is a dead weight - Byte level VAEs expand the context size and reduce the parameters.

**CYBER SECURITY**
Evasion techniques - 2023 SoTA of the obfuscation techniques in the blockchain space.