Elijah Ng

elijah@0xeljh.com | +65 9623 2646 | linkedin | github | website

WORK EXPERIENCE

Pacts (Pre-seed Airdrops-as-a-Service startup)   **Remote (Amsterdam)**
Full Stack Engineer   *Feb 2024 - Nov 2024*

- Decoded and analysed DeFi protocol interactions (GMX, Permia, etc.) to support campaign design by identifying & pattern matching "real" value-add users, and support downstream data ingestion.
- Built internal simulator/calculator to model campaign reward and progression curves based on on-chain analytics.
- Designed and developed the web and telegram interfaces for users to visualise and manage on-chain activity, airdrop campaigns, and accumulated points. Strong positive feedback from both client protocols and end users.

Freelance   **Remote (Various/NY/HK)**
Empire Group Holdings   *Jan 2023 - Nov 2023*

- Developed systematic strategy backtests for a crypto index fund, analysing over 2,000 tokens across ten years of historical data, resulting in a rigorous breakdown and analysis presented to the CIO and panel of a 2.5B fund.
- Formulated models to capture potential slippage and liquidity issues within the backtesting framework, identifying critical risk factors and issues that could skew returns. Flawless 3rd-party audit by a partner quant firm.
- Developed a similar backtest framework and model ensemble for earnings prediction plays

Drawanyone.io   *Nov 2022 - Dec 2022*

- Reduced peak training VRAM by 50% of dreambooth (stable diffusion few-shot learning) via quantization and attention chunking: saved finetuning costs by 35% by fitting it on a single RTX 3080
- Improved generation (esp. Asian faces) through learning rate control (reduce on plateau), changes to regularization/class image set, and minor data augmentations.

MarinaChain   **Singapore**
Cofounder   *Jan 2022 - Aug 2022*

- Processed over 1.2TB of satellite positional data and vessel engineering specifications to engineer a linear model that estimates vessel emissions. Built a React MVP to integrate the model into a vessel carbon accounting system.
- Researched the feasibility of document understanding models to parse semi-structured vessel engineering spec. sheets.

MindPointEye   **Singapore**
Machine Learning Engineer   *Jan 2021 - Dec 2021*

- Enhanced YOLOX tiny from an average mAP of 0.5 to 0.85 across multiple tasks by adding data augmentation (as per SimCLR) and loss-dependent learning rate control (combined with changes to the SGD optimiser)
- Automated and enhanced dataset annotation process as a self-started initiative: developed a latent space analysis tool by combining GAN models and clustering to detect dataset biases; replaced manual image annotation with a self-training pipeline to annotate scrapped images in a semi-supervised fashion using large vision models. Assigned two regional teams to scale up these in-house tools.
- Developed pipeline for converting torch/ONNX models to quantised RKNN models, for inference on Rockchip NPUs.

EDUCATION

National University of Singapore   **Singapore**
BEng. Engineering Science, minor in CS. Graduate-level classes in numerical methods and control theory. A- median grade.   *Graduation Date: May 2021*

SKILLS

Languages: Python, Typescript, Triton, Java, SQL

Frameworks: PyTorch (and PyTorch internals), Transformers, Accelerate, BitsandBytes, OpenCV | Pandas, Dask, NumPy, Scikit Learn | Next.js, Prisma/Drizzle, PostgresSQL, ChakraUI | Docker, Google Cloud

Domains: GenAI (e.g. Llama, qwen, Stable Diffusion), Computer Vision, Language Modelling, algorithm optimisation (incl. kernel optimisation & training optimisation). Building ETL pipelines, web scraping, and data mining.

PROJECT EXPERIENCE

ETH Tokyo 2023   **Tokyo**

Hackathon Winner: Best data dashboard   *Apr 2023 - Apr 2023*

- Attained buy-in on 3 crucial metrics 1inch needed to deobfuscate 1inch Fusion, a new intent-based gasless swap.
- Presented a Jupyter notebook aggregating USD profit, true volume (removed double counting of intermediate swaps), and total gas fees paid by resolvers (swap executors) on 1inch Fusion. Won 4k in prize money.

degencryptojobs.com   **Remote**

Software Engineer   *Apr 2023 - Mar 2024*

- Built an SEO-optimised crypto job board in Next.js that grew to 10k monthly visitors with no ad spend.
- Iteratively translated usage analytics into improved UI/UX and job recommendations. Improved the bounce rate on initial job post visits from 95% to 65%