Elijah Ng

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A versatile engineer that thrives in environments which embrace creative (sometimes janky) problem solving, wearing many hats, and dives into the deep end

WORK EXPERIENCE

Early Full Stack Engineer @ Pacts (Pre-seed Startup; Winded down) | 2024

- Designed and developed frontend Next.js app & telegram bot for users to track logged on-chain activity, visualize accrued points, check airdrop eligibility, and manage wallets.
- Built SQL + Python reward model to design and simulate point campaigns based on desired end-user activities and incentive curves.
- Decoded and analysed user behaviour and contract interactions on GMX, Premia, etc.

Technical Cofounder @ MarinaChain | 2022

- Modelled carbon emissions of maritime vessels using features constructed from satellite positional data and vessel specifications.
- Built react frontend for ship fleet/voyage tracking and management
- Researched a POC for document understanding for parsing ship specification sheets

AI Engineer @ MindPointEye | 2021

- Through a combination of data augmentation, learning rate control, and a tweak to the PyTorch SGD implementation, improved YOLOX tiny models from 0.6 mAP to 0.85
- Led regional AI and analytics teams on self-started projects: semi-supervised image data scraping and labelling system, dataset curation through latent space analysis
- Developed pipeline for quantizing torch/onnx models on RKNN (Nvidia alternative)

PROJECT EXPERIENCE

Dreambooth Optimization | 2023

- Reduced peak VRAM by 50% of the stable diffusion finetuning method (learning a subject with little images) through quantization and attention chunking
- Improved generation (esp. Asian faces) through learning rate control (reduce on plateau), changes to regularization/class image set, and augmentations

Liquid Crypto Index Fund | 2023

- Implemented systematic strategy backtests for a crypto index fund using a processed dataset of 2,000+ tokens across a decade of data. Zero issues found in 3rd party audit.
- Modelled potential slippage and liquidity issues in the implemented backtests.

EDUCATION

National University of Singapore | 2017 – 2021

BEng. Major in Engineering Science, minor in CS. Double specializations: Computational Eng. & Biomedical Eng. 5 post-grad modules. A- median grade. FYP: Self-organizing neural networks

SKILLS

- ML Engineering (PyTorch, Triton; quantization, graph optimization; training optimization)
- Applied ML (math modelling, statistics)
- Data Engineering (pandas, SQL, web scraping)
- Web development (Typescript, React, Next.js, T3 stack, animations)

OTHER NOTABLE PROJECTS

- ETH Tokyo 2023: Winner of Best Dashboard for analyzing 1inch fusion resolver ("trade executors) on-chain activity and statistics (profit per execution, gas fees, etc.)
- Backsim: An open source pytorch-lightning inspired backtester (work-in-progress)
- degencryptojobs.com: An aggregator of jobs in crypto. Grew to 20k website visitors, 15k telegram subscribers

FAILED PROJECTS

- undertherocknews.com: An LLM-powered news filter (BERT + GPT3) that does not send out periodic news summaries, but only whenever there's something worth reading
- Wearable heart stroke volume sensor: a bioimpedance based sensor that would be worn on the wrist (embedded into smart watch). Required an uncomfortable amount of current through the skin to be sensitive enough.

Feel free to ask me about more projects!