FREYA LIU

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Accomplished Blockchain Developer with extensive experience in designing, developing, and deploying secure, efficient, and scalable smart contracts on Ethereum and Layer 2 solutions like Polygon. My expertise extends to three years in machine learning and macOS development, where I've successfully integrated advanced computational models with practical software solutions. I have a robust command of smart contract development and optimization. I am also well-versed in a variety of DeFi protocols, with specific expertise in mechanisms like yield farming and liquidity mining. Adept at collaborating with cross-functional teams to deliver innovative blockchain and software solutions.

PROFICIENCIES

- **Programming Languages:** Solidity, JavaScript, Python, Go, Rust(Entry Level);
- **Tools & Platforms:** Hardhat, Truffle, Foundry, MythX, Mocha, Ethereum Virtual Machine (EVM), React;
- **Layer2 Solution:** Polygon;
- **Cryptographic Techniques:** Secret Shared Validators, Multisig, Zero-Knowledge Proofs;
- **Libraries/APIs:** Node.js, ether.js, web3.js, Openzeppelin;
- **CI/CD Tools:** Jenkins, Git, Docker;
- **Machine Learning Skills:** Machine learning algorithms, Generative models, System Design & Developments;
- **Certifications:** AWS Certified Machine Learning-Specialty,
  Certified Artificial Intelligence (AI) Application Engineer (Advanced) by MIIT;
- **Awards:** Sliver modal at the Kaggle Competition(Kaggle-LLM Science Exam);
- **Languages:** Chinese (native), English (full professional proficiency, IELTS 6.5).

EXPERIENCE

360DApp   **Remote**
Smart Contract Engineer   *Apr 2023 – Mar 2024*
- Participated as a Smart Contract Developer in designing and implementing smart contracts for **DeFi** platform on **Polygon**;
- Assisted in the migration of legacy code to newer frameworks, enhancing maintainability and codebase stability while minimizing technical debt;
- Implemented a **gas optimization strategy** that reduced transaction costs by 30%, enhancing the overall user experience and attracting more developers to the platform;
- Conducted **security audits** on existing blockchain projects, identifying and mitigating critical vulnerabilities, resulting in a 50% reduction in potential security threats and ensuring data integrity.

Difyswap   **Remote**
Smart Contract Engineer   *May 2022 – Feb 2023*
- Led the development and deployment of smart contracts for handling project applications, NFT sales, and distribution processes, enhancing transaction efficiency by 30% and reducing gas costs by 20%;
- Developed and maintained a robust user registration system with integrated **KYC verification** to ensure security and compliance;
- Collaborated closely with cross-functional team members, ensuring seamless integration of smart contracts with front-end and back-end components, contributing to the strategic direction of the team.

Cisco Systems (China) Research & Development Co., Ltd.   **Hangzhou, China**
Machine Learning Engineer   *Apr 2020 – May 2022*
- Conducted research on various image and video generation algorithms, compared (KPIs), finalized the technological choice, and designed image processing pipelines and video processing pipelines;
- Spearheaded multiple deep learning projects, focusing on the development and training of generative models;
- Utilized TensorRT to enhance inference speed by 20%;
- Re-trained models based on specific datasets and tuned hyperparameters to improve model performance.

Cisco Systems (China) Research & Development Co., Ltd.   **Hangzhou, China**
MacOS Software Engineer   *Apr 2019 – Apr 2020*
- Responsible for **continuous integration** of Webex.app and daily maintenance of the packaging pipeline;
- Maintaining a series of methods for launching MacOS apps: URL Protocol, extension, and installation package start-up, etc;
- Introduced multithreading for packaging apps, resulting in a 60% increase in packaging speed.
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EDUCATION

Zhejiang University   **Hangzhou, China**
Master's degree in Electronics and Communication Engineering   *Sep 2016 – Jul 2019*

Jilin University   **Jilin, China**
Bachelor's degree in Information Engineering   *Sep 2012 – Jul 2016*
- **Honors:** The Second-level Scholarship in Academic Year of 2015 – 2016; The Third-level Scholarship in Academic Year of 2014 – 2015; The Third-level Scholarship in Academic Year of 2012 – 2013;

PROJECTS

Yield Farming (360DApp) *Jun 2023 - Apr 2024*

- **Developed a decentralized yield farming smart contract**, enabling users to stake LP tokens and earn ERC20 tokens securely and efficiently;
- **Crafted sophisticated reward distribution logic** that calculates and disburses rewards based on the amount staked and the duration, ensuring fair and precise allocations;
- **Conducted comprehensive testing of smart contracts** including unit and integration tests to identify and mitigate vulnerabilities;
- **Ensured seamless integration of smart contracts** with frontend interfaces and backend servers, significantly enhancing user experience and interface responsiveness.
o **Technology Stack:** Solidity, ERC20, Polygon, OpenZeppelin, Hardhat, ether.js, Mocha.

Decentralized Token Sale&Airdrop Platform (360DApp) *Mar 2023 – Jun 2023*

- **Developed Polygon-based smart contracts** to facilitate Token Sales&Airdrop , encompassing user registration, token allocation, and ETH transactions;
- **Integrated zero-knowledge proofs (ZKP) and Merkle trees** to manage and verify compact proofs of eligibility, ensuring user privacy while optimizing the system for high throughput and low overhead.
- **Implemented a real-time dynamic pricing mechanism** to adjust token prices based on Ethereum market fluctuations, ensuring equitable and stable pricing;
- **Collaborated with the audit team** to conduct comprehensive security audits and vulnerability assessments, ensuring the integrity of smart contracts;
- **Led comprehensive testing**, including unit and integration tests.
o **Technology Stack:** Solidity, ERC20, OpenZeppelin, Merkle Tree, ZK-Proof, ether.js, Oracle, Mocha.

NFT Launchpad（Difyswap） *May 2022 – Feb 2023*

- **Developed Ethereum smart contracts** for trading ERC721 tokens, integrating complex asset management and security protocols;
- **Enhanced contract security** using OpenZeppelin tools, optimized gas usage and transaction efficiency to improve platform performance;
- **Designed and implemented dynamic fee allocation logic** to ensure fairness and transparency in transaction charges;
- **Collaborated with front-end teams** to ensure smooth integration of contracts, enhancing user interface and experience.
o **Technology Stack:** Solidity, ERC721, OpenZeppelin, Merkle Tree, ZK-Proof, ether.js, Mocha.

Video Style Transfer Algorithm (Cisco) *Jan 2021 – Mar 2022*
- **Led the development of SCTAda**, a GAN-based video style transfer model, achieving high-quality, realistic content generation with coherent styling;
- **Orchestrated model training** with extensive datasets and optimized parameters for enhanced performance;
Publications: Liu, N. Dynamic Style Adaptation Network: A Comprehensive Approach for Video Style Transfer.
International Conference on Image, Algorithms, and Artificial Intelligence (ICIAAI2023), SG, August 11, 2023.

Quality Enhancement for Images and Videos(Cisco) *Apr 2021 - Nov 2021*
- **Enhanced digital images** processing by applying advanced techniques for deblurring, color correction, and character restoration;
- **Improved videos quality** through deblurring, applying super-resolution techniques, and frame interpolation;
- Introduced motion guidance into video generation to control the movement of generated characters.
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Multi-headed Computer Vision Model (Cisco) *Apr 2020 – Feb 2021*
- **Developed 'Ladon,'** a multi-functional computer vision model, integrating background segmentation and gesture recognition using MobileNetV2 and DeepLabV3Plus for enhanced accuracy;
- **Enhanced the segmentation model** leveraging MobileNetV2 and DeepLabV3Plus;
- **Applied YOLO V3** model for Single Shot Landmark Detection.

Continuous Integration Module Developer for Webex on macOS(Cisco) *Apr 2019 – Apr 2020*
- **Engineered macOS application support** for the Mac Arm64 architecture, significantly enhancing Webex's performance on new hardware;
- **Developed the signing and notarization** process for the macOS application using Swift;
- **Crafted Python scripts** to encapsulate CI tasks, providing utilities for creating .pkg and .dmg files;
- **Optimized CI scripts** by parallelizing time-intensive packaging steps, achieving a 60% improvement in package speed.
o **Technology Stack:** Jenkins, Python, Shell, MacOS.