Kunal Arora

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Education

University of California - San Diego   **September 2019 – June 2023**
Bachelor of Science in Mathematics and Computer Science   *La Jolla, CA*
- **Relevant Coursework:** Advanced data structures (C++), Design and analysis of algorithms, Software tools and techniques, Graph Theory, Operating Systems, Programming language design (Haskell), and Statistical methods (R)

Experience

Nethermind   **September – December 2022**
Software intern   *Remote*
- Implementing a Go server as bundler for EIP-4337 (account abstraction using alt mempool) compatible wallets.

Proxima Capital   **March – July 2022**
Junior Solidity Engineer   *Cayman Islands*
- Built core functionality of custody vaults for automating on-chain allocations using **Solidity** and **Foundry**
- Added connections to different Defi yield opportunities to reduce the human cost of manual allocations
- Worked on Defi due diligence team to verify and audit opportunities for the firm to invest in

Blockchain at San Diego   **August 2021 – present**
Co-founder and Head of Education   *La Jolla, CA*
- Started and managed the university's blockchain club with **675+** students and 20+ internal team members
- Designed and taught the education curriculum which includes a **workshop series** and **Solidity developer boot-camp** series, and a comprehensive internal training.

BlockLab   **October 2021 – June 2022**
Undergraduate researcher   *La Jolla, CA*
- Worked under Dr. Jim Short to define, create and experiment with a System Under Test for detecting vulnerabilities anomalies in blockchain network data flows
- Designed and implemented a **private geth network** and added parameters like internal gas tracking to gain insight in simulated attack scenarios in **Ethereum smart contracts**

San Diego Supercomputer Center   **June 2021 – September 2021**
Software Development Intern   *La Jolla, CA*
- Led the team in a fast-paced **Agile** development environment in building Espresso, a productivity app where you can compete against your friends on a group leaderboard, and reviewed code to maintain code and design consistency
- Designed and implemented a scalable and denormalized **Firebase noSQL** serverless backend for the users, boards, tasks, rewards, and discussion channels and utilized Firestore events for handling events in the database for notifications

Projects - more up-to-date here

Smart contract projects | *Solidity, Foundry*   **January 2022 - present**
- Medici - fixed-rate undercollateralized lending marketplace where users can borrow, lend and swap debt permissionlessly
- Halwaswap - Uniswap V3 clone with a logit trading function tailored for discounted asset pairs like ETH/stETH
- Portifi - ERC4626 comptaible vaults for a permissionless and customizable asset manager using 0x API
- Sugarblock - P2P marketplace for non-profits to find skilled labor, and reward them optimistically

ACM Profiles | *Django, Postgres, Node.js*   **October 2020 – December 2020**
- Worked on the backend for the ACM Profiles, a web app for helping ACM (Association for Computing Machinery) club members at UCSD connect with others on various social media platforms, using **Django**, **Postgres**, and **Docker**
- Integrated with the **ACM membership portal** used every day by its members for seamless logging in experience
- Built a recommendation system by utilizing Django's third-party library **Haystack's ElasticSearch** backend

MH370 inspired AI-guided text adventure | *Flask, Firestore, Jupyter Notebook, React*   **April 2021 - June 2021**
- Built text-based 'choose your own adventure' web game focusing on the **human-AI interaction** between the user and the 'ghost of Napoleon' AI agent offering cryptic hints to aid your survival
- Developed a **random forest ML model** trained on vectorized successful path choices and **sentence similarity NLP model** for providing appropriate hints

Technical Skills

Languages: Solidity, Typescript, Python, Go, Rust, C/C++, Java, , SQL
Developer Tools: Foundry, Git, GDB/Valgrind, JUnit, Postman
Technologies/Frameworks: MERN, React Native, Firebase, Figma, PostgresSQL, Jupyter Notebook, Flutter, Docker