

# Molly Beach

SOFTWARE ENGINEER



<https://github.com/mollybeach>

<https://www.linkedin.com/in/mollybeach>



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## EXPERIENCE



### BLOCKMEDIA

MAY 2025 - PRESENT, REMOTE

#### PRINCIPAL SOFTWARE ENGINEER, GO RUST

- Developed protocol-level architecture for a custom Layer 1 blockchain integrating federated AI model coordination into consensus.
  - Designed transaction flows for secure model submission, validation, and on-chain reward attribution custom data types cryptographic verification.
  - Designed and optimized backend APIs with Express.js, Firebase Firestore, and GraphQL for scalable and secure data handling.
  - Contributed to cross-language infrastructure in Go and Rust, enhancing modular consensus logic and decentralized computation pathways.
  - Built testing pipelines and simulations for validator behavior, model convergence, and performance scoring in a distributed training environment.
  - Collaborated with engineers across AI, cryptography, and distributed systems to ensure protocol integrity and validator incentives.
- Go · Rust · PyTorch · Solidity · Docker · Hardhat · Federated Learning · Cryptography · EVM Forks · Protocol Design · AI



### BRKT

JAN 2025 - APRIL 2025, REMOTE

#### SOFTWARE ENGINEER, WEB3

- Developed a blockchain-powered competitive gaming and prediction market platform with smart contract-based betting and prize distribution.
  - Built a responsive Web3 UI using Next.js, React, TypeScript, and integrated wallet connectivity with MetaMask and EVM-compatible wallets.
  - Designed and optimized backend APIs with Express.js, Firebase Firestore, and GraphQL for scalable and secure data handling.
  - Architected Solidity trustless betting mechanisms, ensuring fairness and automation of payouts. Integrated Ethers.js Aptos SDK for seamless smart contract interactions, enabling secure betting prize distribution.
- Next.js · React · TypeScript · Solidity · Ethereum · Aptos · Ethers.js · Express.js · Firebase Firestore · GraphQL · Web3 Integration



### PARADES

JAN 2024 - DEC 2024, REMOTE

#### SOFTWARE ENGINEER, iOS

- Developed and enhanced a financial services app, enabling users to access cash, build credit, and manage debt.
  - Created key iOS features using Swift, focusing on intuitive UI/UX, scalability, and performance.
  - Collaborated with teams to ensure seamless integration and consistent design across app features.
- Swift · iOS Development · UI/UX Design · REST APIs · Performance Optimization · Agile Development · Cross-functional Collaboration

#### SOFTWARE ENGINEER, SCALA, SPECTRA

- Developed and maintained scalable backend services using Scala, leveraging functional programming for optimized data processing. Built RESTful APIs, integrated third-party services, and utilized Akka for distributed programming.
  - Collaborated on cloud-based deployments using AWS and GCP.
  - Participated in code reviews and worked with PostgreSQL and MongoDB for efficient data management. Contributed to Agile development processes.
- Scala · Functional Programming · RESTful APIs · Akka · AWS · GCP · PostgreSQL · MongoDB · Microservices · Agile Development



### ACCENTURE

OCT 2022 - DEC 2023, REMOTE

#### BLOCKCHAIN METAVERSE REACT SOFTWARE ENGINEER

- Incubated new business value in Blockchain and Metaverse, focusing on innovative technologies, multiparty systems, and extended reality

#### GEN AI 3D GRAPHICS BOT CHAT APPLICATION

- Developed a web application combining AI chat and advanced graphics using React and Three.js. Implemented WebGL for 3D rendering, scene management, and custom shaders for graphical effects.
- Microsoft Azure · Astro · Three JS · Tailwind · Blender · Typescript · Javascript · Nanostores CanvasAPI

## SKILLS

### Programming Languages

- > Typescript
- > Javascript
- > Solidity
- > Python
- > Swift
- > Scala
- > Java
- > Rust
- > Golang
- > C++
- > R
- > JSON

- > Ruby

- > HTML, CSS, SCSS

### Frontend Development

- > React, NodeJS

- > Vue

- > NextJS

- > Angular

- > D3.js

- > Tailwind

- > Bootstrap

- > Material UI

- > State Management

- > Redux

- > Zustand

- > D3.js

### Backend Development & API Integration

- > NodeJS

- > Express.js

- > Django

- > FlaskAPI

- > GraphQL

- > REST APIs

- > Web Sockets

### Authentication

- > OAuth

- > JWT

- > Firebase Auth

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## AI PROMPTS BLOCKCHAIN BOT - SOFTWARE ENGINEER

- Developed an AI-powered bot to streamline purchase orders for logistics and accounting, integrating blockchain for secure, transparent transactions.

React · Azure · Power Automate · Swagger · Arrow API · Azure Active Directory · Ethereum

## CRYPTOPLATETRACKR HYPERLEDGER TECHNOLOGIES - SOFTWARE ENGINEER

- Developed a blockchain-based license plate tracking system for the Illinois Tollway, ensuring efficient, secure, and transparent vehicle tracking and payments. Vehicles across state borders. Methods, automatic payments, gas.

Hyperledger Fabric Firefly Besu Indy · GoQuorum Polygon · Edge · Kaleido

## COMCAST COOKIE CONSENT - SOFTWARE DEVELOPER

- Centralized client credentials for 96 backend services by updating config files.
- Automated credential identification and updates with Python scripts.
- Re-deployed services after consolidating credentials for backend integration.

JavaScript · HTML · Python · Security

## TOKEN GATING DISCORD BOT API - SOFTWARE ENGINEER

- Developed a Discord bot to control server access for token holders.
- Bot interfaces with smart contracts to verify token holdings upon user registration.
- Token data is stored in a database via a serverless API, updated through a Moralis webhook.

Solidity · ReactJS · Amazon S3 · Discord API · Web3 · Serverless · ThirdWeb · EthersJS · Moralis · Docker · ERC-4337 · Account Abstraction

## METaverse COOKIE NETWORK - SOFTWARE ENGINEER

- Blockchain Cookie traceability ownership interactivity provides analytics for non-fungible tokens interactions views likes comments purchases.
  - Video game ecosystem networking in Unity gaming usage patterns.
- ReactJS · Metaverse · Solidity · Unity · Hardhat · TypeScript



## PARADES

SEP 2021 - SEP 2022, REMOTE

## SOLIDITY WEB3 ENGINEER

- Establish, implement, and accomplish business objectives in collaboration with the executive and engineering leadership teams.
- Responsible for the entire life cycles of blockchain development.
- Business needs should be mapped to blockchain system architecture module design.
- Assured company generated smart contract technical goals timescales were met.

JavaScript · React.js · Solidity · Node.js · Hardhat · TypeScript

## REACT TYPESCRIPT ENGINEER

- Integrated React Hooks API to simplify functional components, reducing prop-drilling and improving developer and user experience.
- Developed TypeScript ReactJS applications using MUI, with a focus on app management, debugging, security, and GraphQL integration.
- Created API endpoints and implemented backend logic, including SQL stored procedures, tables, models, and services.

ReactJS · GraphQL · Typescript · ExpressJS · SCSS · Heroku · PostgreSQL

## PYTHON BACKEND ENGINEER

- Designed and implemented RESTful APIs in Python using Flask to manage data pipelines and integrate with external services, ensuring secure, efficient, and scalable backend operations for high-traffic applications.
- Developed asynchronous task management Celery and Redis automating background processes optimizing server load improving response times 40%.
- Built and maintained PostgreSQL databases, implementing schema design, data migrations, and query optimization to handle large datasets effectively and ensure high availability.
- Integrated CI/CD workflows Jenkins and Docker for streamlined deployment version control ensuring rapid consistent updates staging production envs.

Python · Flask · PostgreSQL · Celery · Redis · Docker

## Databases & Data Management

- > PostgreSQL
- > SQL, MySQL
- > MS SQL Server
- > Firestore
- > MongoDB
- > Redis
- > Docker

## Data Science & Analytics

- > Pandas
- > Numpy
- > Tensor Flow
- > Matplotlib

## Cloud, DevOps & Infrastructure

- > AWS
- > Microsoft Azure
- > Vercel
- > Netlify, Heroku
- > Cloudflare
- > GCP
- > Docker
- > Kubernetes

## CI/CD

- > Terraform
- > Github Actions
- > Jenkins
- > Gitlab CI/CD

## Serverless Computing

- > Firebase Functions
- > AWS Lambda

## Blockchain & Web3

- > Solidity
  - > Ethereum
  - > Aptos, Near, Arbitrum
  - > Solana
  - > Hardhat, Truffle
  - > Remix, Ganache, Foundry
  - > IPFS, Moralis,
  - > Chainlink, Arweave
- ## Smart Contract Security
- > Zero-knowledge Proofs
  - > Account Abstraction

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## TREASURE

JAN 2020 - AUG 2021,  
REMOTE

### SOLIDITY WEB3 DEVELOPER

- Designed decentralized smart contracts using OpenZeppelin standards (ERC-777/20/721/1155/1400) and deployed IPFS-backed NFT contracts using Pinata and Hashlips art engine.
  - Developed dApps and Web3.js applications with DeFi protocols, using Waffle, Hardhat, React, TypeScript, Web3, and Ethers for frontend UI.
  - Tested contract protocols on Rinkeby, Kovan, and Ropsten forks, and created Web3 scripts for transaction queries with Etherscan APIs.
- Solidity · JavaScript · React.js · Node.js · Hardhat · TypeScript

### GOLANG BLOCKCHAIN ENGINEER

- Developed decentralized smart contracts for asset registration and verification, utilizing Ethereum standards and deploying on local Ethereum networks (Ganache, Rinkeby). Integrated IPFS-backed metadata storage using native IPFS APIs for decentralized asset data.
- Built dApp backend in Golang with [go-ethereum](#), designing RESTful API endpoints for smart contract interaction and asset ownership tracking, and used React for a simple frontend UI.
- Deployed and tested contract protocols on Ethereum testnets, creating Golang scripts for automated transaction handling and real-time asset verification.

Golang · Solidity · React.js · Node.js · IPFS · Ethereum

### PYTHON BLOCKCHAIN DEVELOPER

- Developed smart contracts for decentralized voting and governance systems, following ERC-20 and ERC-721 standards, and deployed on Ethereum and Binance Smart Chain. Integrated IPFS for immutable proposal and result storage using Python's `ipfs httpclient` library.
- Built backend APIs in Python using Flask to handle voting interactions with the blockchain and support for user authentication. Created Web3.py scripts for querying transaction history, fetching proposal states, and conducting secure on-chain voting.
- Tested smart contract functionality on Rinkeby and BSC Testnet, automating end-to-end testing with Pytest and integrating transaction monitoring with Etherscan and BscScan APIs.

Python · Solidity · Flask · Web3.py · IPFS · Ethereum

## PROJECTS



### CRYPTOGENE

MAR 2020 - DEC 2020

Developed a DApp/Web3JS application that converts raw DNA data from Ancestry.com into raymarching shader art, transformed into Ethereum-based NFTs. Implemented user login system deployed on Firebase. Resolved front-end issues in VueJS collaborated with stakeholders to design & implement frontend modules. Utilized GLSL for shader development.



### SHADER PARK

SEPT 2019 - FEB 2020

Developed the first user-to-user trading app for gift cards, enabling instant buying, selling, and trading via mobile. The first-generation app was built entirely in Objective-C.



### CARD SWAPPER

SEPT 2017 - DEC 2019

## EDUCATION



### BRAINSTATION

JAN 2020 - APR 2020,  
ONTARIO, CA

#### WEB DEVELOPMENT DIPLOMA

React, Javascript, SCSS, HTML5, SQL, Front End Responsive Design Worked with PMs, UX designers, Data Science, Digital Marketing Team on Projects.



### UNIVERSITY OF WASHINGTON

SEP 2014 - AUG 2017,  
SEATTLE, WA

#### BACHELORS OF SCIENCE

Molecular Cellular Developmental Biology (MCDB)  
Computer Science Software Engineering Minor (CSSE)

## Testing & QA

- > Jest
- > Mocha Chai
- > Playwright
- > Pytest
- > Hardhat, Foundry, Truffle

## Game Development & Creative Coding

- > GLSL
- > ThreeJS
- > Shaderpark
- > Unity
- > Unreal Engine
- > Canvas API

## System Design & Scalability

- > Distributed Systems
- > Microservices
- > Event Driven Architecture
- > Caching & Load Balancing
- > Redis,
- > Memcached
- > Nginx
- > Cloudflare

## Program Management & Agile

- > Jira
- > Scrum,
- > Kanban
- > Jira
- > Linear
- > MS SQL Server

- > PostgreSQL

## Message Queues & Event Driven Architecture

- > Apache Kafka
- > RabbitMQ, ZeroMQ
- > Redis Streams, NATS
- > Event Sourcing, CQRS
- > Webhooks
- > Pub/Sub Architecture
- > Google Pub/Sub, AWS, SNS/SQS