

PRABAL PATRA

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EXPERIENCE

Stable Channels (Summer of Bitcoin)

May 2026 – Aug 2026

Software Engineering Intern

Remote

- Built **Lightning Network** payment protocol on **LDK Node**: overcollateralized channels maintaining BTC-to-dollar peg with real-time state reconciliation.
- Refactored **Notification Service Extension** with **SQLite** cross-process locking; **Lightning** push settlement survives app kills without stuck payments.
- Built **SPV Header Chain**, **mempool WebSocket**, and **Esplora** polling with crash-safe replay; shipped biometric auth and partial backup.

Protocol Labs Developer Guild (PLDG)

Aug 2025 – Mar 2026

Blockchain Contributor

Remote

- Fixed **FanOutChan** deadlock in drand: non-blocking select replaced blocking sends holding read locks during **DKG broadcast**; closed delegate channel to stop leaks.
- Eliminated **N+1** queries in drand Postgres cursor: per-cursor **PreviousSig** cache cut queries from ~2N to ~N; added keyset pagination for history exports.
- Implemented **Kademlia** replication in libp2p cpp-libp2p: configurable re-announce cycles, getAllRecords storage interface, runtime interval controls for DHT persistence.

Sybertnetics Artificial Intelligence

Jun 2025 – Jan 2026

SDE Intern

Remote

- Implemented **Runa compiler** language features, refactored **runtime paths**, and cut execution-time regressions.
- Built pilot apps surfacing edge cases in **persistence** and **interaction models** that shipped as patches to core runtime.

PROJECTS

ZYURA: On-Chain Flight-Delay Insurance on Solana (GitHub) (Live)

Tech: Solana, Anchor, Next.js, React, Switchboard, USDC

- Built parametric flight-delay insurance protocol with instant USDC payouts via **Switchboard oracles**.
- Implemented policy NFTs, risk-pool vaults, LP shares, and an **Anchor + Next.js** dashboard; validated claim flows on devnet.

SortVision: Sorting Algorithm Visualizer (GitHub) (Live)

Tech: Next.js, React, Docker, Vercel

- Reached **1,000+ weekly users** across **72+ countries** and **237 GitHub stars** with **73 forks**.
- Architected real-time sorting visualizer; deployed with **Docker** and **Vercel**.

SpotHole (GitHub)

Tech: Flutter, AWS, Cloudinary, Twitter API

- Built mobile pothole-reporting app with image capture, GPS tagging, and dashboard-based status tracking.
- Integrated Cloudinary/AWS storage and automated Twitter alerts for location-aware hazard reporting.

EDUCATION

Scaler School of Technology

Aug 2024 – Sep 2028

Undergraduate Program in Computer Science

Bengaluru, India

- CGR: **8.39**

Birla Institute of Technology and Science, Pilani

Aug 2024 – Sep 2027

Bachelor's in Computer Science

Pilani, Rajasthan

- CGPA: **9.38**

TECHNICAL SKILLS

Languages	Rust, Go, Swift, C/C++, TypeScript, Solidity, SQL
Blockchain	Bitcoin, Lightning Network (LDK), Solana (Anchor), EVM, Algorand, Oracles, CPI, PDAs, Token-2022
Systems	libp2p, Drand, DKG, Kademlia DHT, Distributed Consensus, P2P Networking, SQLite, PostgreSQL
Frameworks	React, Next.js, Node.js, Express, Anchor, iOS (SwiftUI)
Tooling	Git, GitHub Actions, Docker, CI/CD, Linux, Postman, GitHub Copilot

ACHIEVEMENTS

- 2nd Runner-Up + Best Web3 Project** – RIFT '26 Hackathon, PW IOI (Feb 2026): Parametric insurance protocol on Algorand.
- 2nd Runner-Up** – Monad Blitz Bengaluru (Nov 2025): Flight-delay insurance protocol on Monad with NFT policies and USDC payouts.
- Winner** – Scaler AI Labs Hackathon, SST (Nov 2025): High-fidelity environment clone for reinforcement learning experimentation.
- Runner-Up** – Algo Trek, Petrichor'25 IIT Palakkad (Jan 2025): Flagship algorithmic challenge; competitive programming.
- Runner-Up** – Rabble Track, Unfold 2024 Hackathon (Dec 2024): Multi-factor auth system for multichain wallet.