Debjit Bhowal

Bachelor of Technology
in Mechanical Engineering (GPA: 8.3)
Indian Institute Of Technology, Ropar

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EXPERIENCE

•Software Developer   *Oct 2022 - Present*
AstroTech Labs   India, Remote

- Wrote smart contracts for Automated Market Making and Social-Fi applications built using **Move** language.
- Implemented smart transaction routing through liquidity pools with best swap ratios across AMMs and orderbooks.
- Operated high availability Cosmos chain validators with Horcrux multi-party signing across 4 chains.
- Setup fail-safe system health **monitoring and alerts** in **Python** for validator cluster running in **GCP**.
- Achieved **80% cost savings** in **AWS** using **Terraform**, custom **CloudWatch** metrics for resource scaling, **SQS** and **ECS** for processing, and efficient data storage in **DynamoDB** and **S3** using a microservices architecture.
- Architected scalable blockchain event indexing pipeline using **Lambda** functions and **DynamoDB** using stream and batch processing and exposed them via **GraphQL** APIs.
- Fine-tuned custom AI pipelines using DreamBooth and LoRA training, in **Python** and **PyTorch** for NFT assets.

•AI and Backend Intern   *Jan 2021 - Oct 2022*
Health Tick   India, Remote

- Built a serverless and personalized activity-based notification system using **Google Cloud Platform's Pub/Sub** and **Cloud Run** for processing, **Firestore** for persistence and **Firebase Cloud Messaging** for delivery.
- Improved user engagement and retention by adding event-driven gamification elements like streaks and leaderboards. Designed systems to synchronize realtime updates across thousands of users.
- Designed and implemented a scalable and personalized social feed system, optimizing the backend for real-time content recommendations and seamless user interactions.
- Built and deployed intelligent ML systems for closed-domain question-answering, search engines and chatbots.

•Embedded Software and AI Developer   *Jan 2022 - Jun 2022*
Epilepto   Ropar, Punjab

- Optimized **TensorFlow Lite model** to run on an ESP32 to predict real-time body movements.
- Enabled two-way communication between wearable device and remote device for periodic sync and batch-writes.
- Designed a file-system using low level programming in **C and C++**.

TECHNICAL SKILLS

- **Programming Languages**: Proficient: **C/C++, Python**; Basic: JavaScript, TypeScript, Rust, MATLAB
- **Cloud and Infrastructure**: AWS, GCP, Firebase Docker, Terraform, Serverless, GitHub Actions
- **Tooling and Libraries**: Git, Linux, SQL, NoSQL, GraphQL, Flask, Tensorflow, PyTorch, Node.js, Matplotlib

CAMPUS INVOLVEMENT

- **Representative**, Zenith, IIT Ropar: Launched AstroMag, a monthly astronomy digest   *Oct 2021 - Sep 2022*
- **Crew Member**, Enactus, IIT Ropar: Took part in Enactus Nationals   *Jan 2021 - Jun 2022*
- **Vice President**, ShARE, IIT Ropar: Lead the junior team through a healthy culture of social entrepreneurship *May 2022*

ACHIEVEMENTS

- **Won the best On-Chain Identity project in Scaling Ethereum 2024**, built BuildFi, a social investment platform *2024* that enables small developers who build in public to raise funds from people who believe in the projects.
- **Won the best ChainLink CCIP Integration in ETHIndia, 2023**, organized by ETHGlobal. Built Samvad, a cross- *2023* chain discussion forum with an incentive structure that promotes good conversation.
- **Won silver in Sui Foundation's Hackathon in Decentralised Finance**, organized by CoinDCX. Integrated smart *2023* transaction-routing between automated market makers and on-chain orderbook based liquidity pools.
- **Graduated among 47 people out of 200 selected worldwide**, in the Interchain Developer Academy. Learnt to *2023* scaffold application-specific blockchains using Cosmos SDK and Tendermint Consensus with Golang.
- **Ranked top 10 in ISRO's InterIIT Competition for solar flare detection**, in raw lightcurve data from ASTROSAT *2022* using peak detection, fast fourier transforms and curve completion.