

Piush Bose

B.Sc. Cloud Technology & Information Security (Honors)
Techno India University, Kolkata
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EDUCATION

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- **Bachelor of Science in Cloud Technology & Information Security (Honors)** 2023 – Present
Techno India University, Kolkata

PERSONAL PROJECTS

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- **Veritas** GitHub
Autonomous predictive network defense and infiltration forecasting platform powered by AI World Models.
 - Formulates network traffic as causal transition dynamics $P(S_{t+1} | S_{\leq t})$ to forecast infiltration up to 75s ahead ($K = 5$).
 - Delivers a 60-second early warning window prior to exploit execution with closed-loop firewall isolation.
 - Technology Used: Python, PyTorch, Apache Kafka, FastAPI, Next.js, Docker.
 - **RustyKV** GitHub
Redis-compatible distributed in-memory key-value store with persistence and replication.
 - Implemented AOF/RDB persistence, asynchronous replication, and pub/sub message queuing in Rust.
 - Built a JavaScript/TypeScript SDK, CLI client, and interactive React dashboard for real-time state introspection.
 - Technology Used: Rust, C++, React, Tokio.
 - **SpeakTrace** GitHub
Automated AI audio analysis pipeline for multi-speaker diarization and speech synthesis.
 - Implemented speaker identification, speech-to-text transcription, and timestamped conversation analysis.
 - Technology Used: Python, PyTorch, Pyannote, React, FastAPI.
 - **Everato** GitHub
Self-hostable, scalable event management platform for virtual and in-person events.
 - Built ticketing infrastructure supporting QR scanning, email triggers, coupon engines, and custom domains.
 - Technology Used: Go, TypeScript, PostgreSQL, Docker.
 - **16-Bit Virtual Machine & Assembler** GitHub
Cycle-accurate 16-bit virtual machine with custom ISA and two-pass assembler.
 - Designed register-memory architecture, custom opcode decoding, and an execution debugger.
 - Technology Used: Rust, Assembly.

EXPERIENCE

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- **Software Engineer (SDE II)** Apr 2024 – Present
NetpieDev Remote, India
 - Engineered backend microservices and RESTful APIs, improving system uptime and request response times.
 - Collaborated with cross-functional teams on scalable data schemas, authentication, and authorization layers.
 - **Technical Lead & Lead Instructor – Cloud & DevOps** Aug 2024 – Apr 2026
Google Developer Groups (On Campus @ TIU) Kolkata, India
 - Mentored 300+ students in cloud architecture, Docker containerization, Kubernetes orchestration, and CI/CD.
 - Conducted hands-on technical bootcamps on infrastructure-as-code and cloud security on GCP.
 - **Full Stack Developer Intern** April 2024 – Oct 2024
The Entrepreneurship Network (TEN) Remote, India
 - Developed and maintained responsive React interfaces, improving user experience and engagement.
 - Optimized database queries and API endpoints, noticeably reducing platform latency.

TECHNICAL SKILLS AND INTERESTS

Languages: Rust, Go, TypeScript, JavaScript, Python, C++, C, SQL, Bash.

Backend & Frameworks: Node.js, Express.js, NestJS, FastAPI, Gin, Actix-web, Next.js, React.

Databases & Messaging: PostgreSQL, MongoDB, Redis, MySQL, Apache Kafka, Prisma ORM.

Cloud & DevOps: Docker, Docker Swarm, Kubernetes, AWS, GCP, GitHub Actions, Terraform, Ansible, Linux.

Libraries & Systems: PyTorch, Pyannote, Tokio, WebSockets, WebRTC, RESTful APIs.

Areas of Interest: Distributed Systems, AI World Models, Cloud Infrastructure, Systems Programming.