Abdullah Al Mahmud

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Education

Texas Tech University — Lubbock, TX

B.S. in Computer Science, Minor in Mathematics — *Jan 2025 – May 2028*

- GPA: 3.94/4.00 | SAT: 1540 (Math: 800) | President's List (2x) | Undergraduate Research Scholar (Honors College)
- Involvement: ICPC South Central USA Regional (Texas Tech Team 1), Basta x Google Code2Career Fellow (G-SWEP), Engineers Without Borders Fellow at Cornell University, Stanford Code in Place Section Leader

Professional Experience

Dorsia — New York, NY

Software Engineer Intern — *June 2026 – Present*

- Built Firecracker microVM sandboxes isolating tool execution for internal Rust-based AI agents, which triage SMS, WhatsApp and email inquiries in one queue and draft staff replies, helping cut response time by ∼**70%**.
- Streamed live inventory to **30,000+ concurrent users** during real-time inventory drops with a transactional outbox that relays every stock change from the Laravel GraphQL backend through SQS to Pusher WebSockets.
- Cut events-search latency by **700 ms** by precomputing venue availability into a DynamoDB read model fed by Kafka change events, then serving it to the React Native app behind a feature flag over Laravel GraphQL.
- Instrumented Docker services on AWS ECS and RDS databases with Datadog APM traces and custom metrics, tagging request rate, latency and errors by club to power per-club dashboards for the internal operations team.

Yobo AI — Ontario, Canada (Remote)

Software Engineer Intern — *June 2024 – Dec 2024*

- Migrated the backend from Firebase to PostgreSQL on AWS RDS, cutting API latency by **150 ms**, and split the monolith into Go microservices on AWS Lambda, API Gateway and S3 that serve **10,000+ daily requests**.
- Cut manual data entry by **85%** and lifted demo-to-trial conversion by **38%** with an ETL pipeline using Claude 3.5 Sonnet tool use on AWS Bedrock to extract structured menu data from menu photos and Uber Eats listings.
- Shipped a speech-to-speech phone agent in Python on Twilio Media Streams and the OpenAI Realtime API over WebSockets, replacing a cascading architecture, with **99%** accurate tool calls and **25%** fewer false interruptions.
- Built a GitHub Actions CI/CD pipeline for the Go microservices that cut deploy time from **30** to **5 minutes**, adding table-driven tests and structured logging so the team could ship to production several times a day.

Projects

teamree (Agentic IDE) | *TypeScript, Electron, Node.js, WebSockets, Durable Objects* — *teamree.us*

- Built a macOS agentic IDE that runs parallel Claude Code agents, each in its own git worktree, and exposes a single RPC method catalog over Electron IPC, a Unix-socket JSON CLI and an encrypted peer-to-peer link.
- Designed a Cloudflare Workers relay that pairs teammates behind NAT and forwards only end-to-end encrypted Noise-protocol frames, rate-limited by per-connection token buckets (**200 frames/s**, **4 MB/s**) with **170+ tests**.

draw2agent | *TypeScript, Node.js, MCP, Excalidraw, React* — *view*

- Created an MCP server with **5,000+ installs** that lets developers sketch UI changes directly on live dev pages and returns annotated screenshots, DOM nodes and CSS selectors to AI coding agents as implementation context.
- Published the server to the official MCP Registry with **4 tools** that Cursor, Antigravity and Claude Desktop call to turn sketches into code, with iPad drawing over the local network or an ngrok tunnel via QR code pairing.

zeg | *Python, C++, PyTorch, OpenCV, CUDA, pybind11* — *view*

- Developed a local AI interviewer running live technical screens on an NVIDIA GB10 (DGX Spark), serving an 11B full-duplex speech model with PyTorch on CUDA and streaming **80 ms** audio frames between Python processes.
- Engineered its real-time C++ video pipeline with OpenCV that tracks a candidate's face, gaze and head pose at **125+ fps** on a single CPU core, exposed to Python through pybind11 and tested by **28 GoogleTest cases**.

Honors & Awards

3x Hackathon Winner | *1st JacHacks (UMich), 1st TidalHack (Texas A&M), AMD Track Winner at HackCU*

5th of 400+ teams, JAXA Kibo Robot Programming Challenge | *code ran on a robot aboard the ISS*

Technical Skills

Languages: Python, Go (Golang), Rust, TypeScript, JavaScript, C++, SQL, Java, C, PHP, Bash
Web & Data: React, Next.js, Node.js, Laravel, GraphQL, REST, WebSockets, PostgreSQL, Redis, Kafka, DynamoDB
Cloud & DevOps: AWS (Lambda, ECS, RDS, S3, SQS), Docker, Firecracker, Cloudflare Workers, GitHub Actions
AI & ML: LLM agents, tool use, MCP, OpenAI Realtime API, AWS Bedrock, PyTorch, CUDA, OpenCV, pybind11