

ABDUL MOIZ HUSSAIN

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EDUCATION

FAST NUCES

Expected Graduation: 2027

Bachelors of Computer Science — 6th Semester

Karachi

- Awarded Dean's List of Honor for 4 semesters — **GPA: 3.63**

PROJECTS

Uptime Monitor | [Source Code](#)

NodeJS | TypeScript | BullMQ

- Architected a Distributed Uptime Monitor using BullMQ's decoupled producer-consumer model to orchestrate scalable jobs across distributed workers.
- Engineered a BullMQ task queue processing 10+ heartbeats/sec (600+/min) per worker with auto-retries, failure handling, and 3,000+ concurrent jobs.
- Implemented an automated Vitest suite with 30+ unit/integration tests for heartbeat logic and Redis orchestration, ensuring reliability during state transitions and failures.

Algorithmic Analysis and Visualization System | [Source Code](#)

C++ | TypeScript | NextJS

- Engineered 13+ Divide & Conquer algorithms in C++ ($O(n \log n)$), optimizing Karatsuba to $O(n^{1.58})$ and achieving 2.5ms for 1k-point Closest Pair.
- Built a Next.js 14/TypeScript platform visualizing algorithmic state changes via Framer Motion; created 5+ RESTful API routes bridging C++ backends to interactive recursive tree displays.
- Validated complexity bounds via 40+ automated benchmarks on 1k+ points/digits datasets; implemented a real-time dashboard to monitor performance.

Stormshelf: Backend API | [Source Code](#)

NodeJS | ExpressJS | Multer

- Built a Node.js/Express REST API with 15+ modular endpoints and 4 Mongoose models, streamlining book catalogs, reviews, and favorites with clear separation of concerns.
- Architected a secure auth system with dual-token JWT and Bcrypt hashing, using HTTP-only cookies and middleware to protect 100% of sensitive API routes.
- Integrated Cloudinary + Multer for book cover uploads, optimizing storage/retrieval and supporting scalable CRUD workflows across books, reviews, and user collections.

MiniGpt | [Source Code](#)

PyTorch | NumPy | Python

- Decoder-only Transformer in PyTorch with Multi-Head Self-Attention, causal masking, and layer normalization.
- Tokenization and positional encoding pipeline with tensor shape verification across all transformer blocks.
- Applied SFT and Instruction Tuning to optimize prompt-following and long-range sequence dependency capture.

ACHIEVEMENTS

Competitive Programming | [Codeforces](#) | [LeetCode](#)

- Achieved Pupil rank on Codeforces; solved 700+ problems across LeetCode, Codeforces, and AtCoder by utilizing fundamental Data Structures and Algorithms to develop optimal solutions.
- Qualified for ICPC Regionals and secured 3rd Place in Coders Cup 2025 through algorithmic optimizations.

AI Competitions

- **Champion, AI Grand Prix (Procom 2026):** Led EDA & feature engineering; built auto-tuned XGBoost pipeline, outperforming 50+ teams.
- **4th Place, AI Got Talent (DevDay 2026):** Sentiment analysis pipeline with ensemble methods & class-imbalance handling; achieved 0.986 F1.

TECHNICAL SKILLS

Languages: Python, C++, JavaScript, TypeScript

Deep Learning: PyTorch, TensorFlow, Scikit-Learn, NumPy

Development: NodeJS, ExpressJS, ReactJS, NextJS, PostgreSQL, MySQL

Tools: Git, Docker, Vitest, BullMQ, Linux