

# Muhammad Tayyab

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## SUMMARY

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Skilled Full Stack Developer with strong problem-solving skills. Adept at competitive programming, securing top positions in coding competitions. Strong understanding of OOP principles, and real-world software design. Proficient in C++, JavaScript, and MERN with hands-on experience in backend development and database management. Seeking opportunities to apply expertise in software development in real-world projects.

## EXPERIENCE

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### Developer – Microsoft Learn Student Ambassadors (MLSA) Team

Jan '25 — Present

Maintaining and enhancing the official MLSA website. Collaborating with team members to implement features, fix bugs, and improve site performance and usability.

### Client Project

Apr '25 — Apr '25

Developed an Windows Forms game in C# with increasing difficulty, random enemy movements, and background sound effects using OOP concepts. Delivered a playable desktop game in accordance to client requirements.

## PROJECTS

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### Microservices [Link](#)

- Developed a ticketing application using Node.js microservices. The system includes modular services for **auth**, **tickets**, **orders**, **payments**, and **expiration**, with shared logic extracted into a reusable common module published as an **NPM package**.
- Deployed all services to a **Kubernetes cluster**, with **Ingress-NGINX** managing internal routing and **NATS Streaming** handling inter-service communication.
- Used **Scaffold** for rapid local development with live reloads and streamlined Kubernetes deployments.
- Integrated **Docker** for containerization and implemented a full **CI/CD pipeline** for automated testing and deployment.

### Multivendor E-Commerce Platform [Link](#)

- Developed a fully **MERN** stack multivendor e-commerce platform with **customer**, **seller**, and **admin** roles, enabling seamless **product management**, **order processing**, and **role-based access control**.
- Implemented a backend with **Node.js** and **Express.js**, creating **RESTful APIs** for authentication, product handling, and order processing. Utilized **MongoDB** for scalable data storage.
- Designed an interactive frontend using **React.js**, with **Redux Toolkit** for state management and dynamic UI updates.

### Solitaire Game [Link](#)

- Developed a **Solitaire game** in C++, implementing core game mechanics using **data structures and algorithms** for efficient gameplay.
- Utilized **queues** for the waste pile, **stacks** for foundations, and **linked lists** for tableaux, ensuring structured card management.
- Implemented the **Fisher-Yates shuffle algorithm** for randomized and fair card shuffling.

### E-Commerce Application [Link](#)

- Developed a full-stack E-commerce application using the MERN stack. Features include user authentication, Redux for state management, product management, and order processing.

### My Database [Link](#)

- Developed a custom **SQL-like database engine** in C++ with support for **SELECT**, **INSERT**, **UPDATE**, and **DELETE** queries using a regex-based parser.
- Implemented a **file-based** storage system and schema manager for dynamic table creation and persistent data handling.
- Support for **Complex logical conditions** (AND, OR, NOT) in WHERE clauses using a custom expression evaluator.

## SKILLS

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**Programming Languages** C++, JavaScript, TypeScript, C#

**Frontend Development** HTML, CSS, React.js, Redux, Redux Toolkit, Next.js

**Backend Development** Node.js, Express.js, REST, Docker, Kubernetes, Microservices, CI/CD

**Databases** SQL, MongoDB, MySQL

## EDUCATION

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**BS in Computer Science**, University of Engineering and Technology, Lahore

May '23 — Present

## ACHIEVEMENTS

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### Digital Pakistan Speed Programming Ignite Contest

Jul '25

Competed among **1400+ teams nationwide**, featuring the country's top programmers.

Qualified for the **Top 50 on-site final round** and secured a **Top 25 position** in the finals.

### Runner-Up at PUCON'25 held by Punjab University

May '25

Secured 2nd place out of 130+ teams by competing in 2 rounds.	
<b>Runner-Up in Code Rush'25 Competitive Programming held by ITU</b>	May '25
Secured 3rd position out of 130+ teams by competing in 2 rounds.	
<b>Winner in Logiz Blitz'25 held by UET</b>	May '25
Secured <b>1st place</b> by solving complex coding problems.	
<b>Runner-Up in SOFTEC'25 Programming Competition held by FAST Lahore</b>	Apr '25
170 Programming teams ' hours of coding and secured 3rd position.	
<b>Runner-Up in UTS 5.0 Coding Competition</b>	Jan '25
Secured 2nd place by solving challenging algorithmic problems under time constraints.	
<b>Position Holder in CodeX Programming Contest</b>	Jan '25
Achieved <b>3rd place</b> , solving 5/6 problems, demonstrating strong problem-solving skills.	
<b>Winner in ACM Coding Contest</b>	Dec '24
Secured <b>1st place</b> by solving complex coding challenges in a high-stake competition.	
<b>Runner-up in Speed Coding at MechTech'24</b>	Jan '24
Earned <b>2nd place</b> for writing optimized code under extreme time pressure.	