MOHAMMAD OYAISS USSMAN

Education

National Institute of Technology, Srinagar — Nov 2022 – June 2026
Bachelor of Technology in Information Technology — *Srinagar, Jammu and Kashmir*
- CGPA: 7.6 / 10.0

Government Boys Higher Secondary School, Gandhinagar Jammu — June 2019 – June 2021
Higher Secondary (Science - PCM) — *Jammu, Jammu and Kashmir*
- Percentage: 90.0% (Class 12$^{\text{th}}$)

Jammu and Kashmir Sainik School Manasbal — Completed in 2019
Secondary School (Class 10th) — *Ganderbal, Jammu and Kashmir*
- Percentage: 89.8% (Class 10$^{\text{th}}$)

Experience

Ministry of Electronics and Information Technology (MeitY) — Jan 2025 – Mar 2025
Research Intern – Post Quantum Cryptography — *Onsite*
- Worked on variations of NTRU-based post-quantum cryptosystems using modified lattice structures.
- Developed key encapsulation mechanisms (KEM) and polynomial multiplication optimization.
- Used SageMath and Python for algebraic verification and cryptographic computation.

Projects

tDiTRU: Twisted Dihedral Cryptosystem | *C, Python, SageMath*
- Implemented variations of NTRU cryptographic algorithms with modified lattice structures.
- Developed efficient multiplication algorithms and key encapsulation mechanisms (KEM).
- Applied mathematical concepts and algorithm optimization for secure cryptographic operations.

TCP/IP Network Simulator | *C++, OOP, Protocol Stack*
- Created a layered simulator implementing core functionalities across all TCP/IP model layers.
- Enabled creation of end devices, hubs, switches, routers, and full-stack communication.
- Implemented: **Physical, Data Link, Network, Transport, Application Layers**.
- Protocols used: **Stop and Wait ARQ, Selective Repeat, Token Passing, RIP, HTTP, DNS**.
- Simulated process-to-process communication, routing, address learning, and flow control.

K-WEB – Cultural Tourism Platform | *MongoDB, Express, React, Node.js, JWT*
- Built a full-stack platform to promote Kashmiri culture, showcasing cuisine, traditions, artifacts, and destinations.
- Implemented hotel booking, recipe browsing, and artifact purchasing with secure user authentication.
- Used REST APIs and role-based routing for dynamic content rendering and smooth user experience.

Technical Skills

Languages: C, Java, C++, JavaScript, Python, SQL, HTML, CSS
Technologies/Frameworks: React.js, Node.js, Express.js, MongoDB, JWT
Developer Tools: VS Code, Git, GitHub, Linux (Ubuntu), Hadoop, Jupyter Notebook

Relevant Coursework

- Data Structures
- Algorithm Analysis
- Object Oriented Programming
- Operating Systems
- DBMS
- Mathematics
- Programming Languages
- MERN Stack
- Computer Networks
- Artificial Intelligence
- Software Engineering
- Web Development

Leadership / Extracurricular

- Worked as a Teaching Expert at **FILO** and a Subject Matter Expert at **Chegg**.
- Personal interests include playing Football and exploring emerging technologies.