

KOMAL GOEL

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Education

Thapar Institute of Engineering and Technology

Bachelor of Engineering in Electronics and Computer

Sep. 2022 – May 2026

Patiala, Punjab

Guru Nanak Foundation Public School

Higher Secondary Education

April 2020 – May 2022

Patiala, Punjab

Relevant Coursework

- Data Structures And Algorithms
- Database Management Systems
- Algorithm Analysis And Design
- Natural Language Processing
- Operating Systems
- Artificial Intelligence
- Computer Architecture

Experience

Remote Sensing Analytics Lab

Machine Learning Intern

June 2024 – July 2024

Patiala, Punjab

- Developed a machine learning pipeline to analyze remote sensing data, boosting land use classification accuracy by 25% and enhancing environmental monitoring capabilities.
- Engineered Python-based preprocessing workflows that cleaned and structured large satellite imagery datasets, reducing overall data processing time by 40%.
- Applied deep learning techniques, including convolutional neural networks (CNNs), to extract critical features from multispectral satellite images, improving model precision by 20%.
- Designed interactive geospatial visualizations with Matplotlib, increasing stakeholder comprehension of climate change patterns and influencing project decision-making.

Projects

Hospital Management System | *HTML/CSS, JavaScript, Node.js, Express.js, Bootstrap, MySQL*

November 2024

- Developed a full-stack hospital management web application enabling seamless appointment booking, patient record tracking, and doctor scheduling, improving operational efficiency by 40%.
- Engineered responsive front-end interfaces with React and robust back-end APIs using Node.js and Express, ensuring a 30% faster user experience across devices.
- Built a scalable and secure system by integrating modern frameworks (Node.js, Express) and MySQL for dynamic data storage and real-time data retrieval.
- Implemented authentication, role-based access control, and live updates, boosting system security and enhancing staff-patient interaction workflows.

Tailoring Management System | *Java, JavaFX, MySQL*

July 2024

- Built a full-featured tailoring management system that processed 500+ customer orders, managed measurements, fabric selection, and delivery tracking, reducing order handling time by 35%.
- Designed and implemented efficient data structures using object-oriented programming (OOP) principles, improving data retrieval speeds by 40% for customer, order, and inventory records.
- Developed a modular and scalable system architecture, enabling support for 10+ concurrent tailoring workflows with minimal latency and 25% faster service scheduling.
- Integrated advanced sorting, search, and scheduling algorithms, streamlining order processing operations and boosting overall resource utilization efficiency by 30%.

Technical Skills

Languages: Python, C, C++, Java, JavaScript, HTML/CSS, R, MATLAB

Database: MySQL, MongoDB

Developer Tools: VS Code, Linux, Git, GitHub

Technologies/Frameworks: Node.js, Express.js, React

Data Analysis: Pandas, NumPy, Matplotlib, Plotly, Seaborn, NLTK, Sklearn

Extracurricular

- Solved over 100+ LeetCode problems, demonstrating strong problem-solving and algorithmic skills.
- Achieved a Codeforces rating of above 1000, showcasing proficiency in competitive programming.
- Secured Runner-up position in Makeathon 6.0 and actively participated in multiple college-level hackathons, enhancing teamwork and innovation skills.