

TOSHIK SONI

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Education

Sir Padampat Singhanian University

Udaipur, Rajasthan

Bachelor of Technology

October 2022 – Expected May 2026

Grade Overall: 8.575 CGPA, Grade Majors: 9.000 CGPA

Computer Science and Engineering

Kendriya Vidyalaya

Kota, Rajasthan

CBSE 12th Board

April 2021 – March 2022

Grade: 86.2%

Physics, Chemistry, Mathematics with Computer Science

Relevant Coursework

- Data Structures
- Algorithms
- Operating System
- Design Thinking
- Database Management
- Computer Architecture
- Internet of Things
- Competitive Coding

Experience

Intern

July 2025 - Present

Defense Research & Development Organization (DRDO)

Chandigarh

- Researched and analyzed major natural disasters, including Glacial Lake Outburst Floods, avalanches, and landslides, which severely impact human lives, army settlements and infrastructure.
- Processed Sentinel-1 SAR data to generate interferogram for analyzing surface displacement and deformation, supporting detection and prediction of natural hazards such as floods, landslides, and rockfalls.
- Developed automated workflows for generating Digital Elevation Models (DEMs), time-series InSAR analyses, and ice offset tracking products.

Research Intern

May 2025 - July 2025

Indian Institute of Technology (IIT BHU)

Varanasi, Uttar Pradesh

- Worked with various microcontrollers, such as ESP, Arduino, and Raspberry Pi, for wireless networking using the Long-Range (LoRa) communication protocol.
- Enhanced the open-source LoRaMesher library by adding link quality metrics, time synchronization, and encryption and support for LoRaWAN by creating bridge nodes, which can send data to the LoRaWAN gateway.

Winner – Smart India Hackathon '23 & '24

December 2023 & 2024

36-Hour Software Hackathon Organized by Ministry of Education

Landran, Punjab & New Delhi

- Solved two problem statements given by the Indian Ministry of Defence on the theme of disaster management.
- Supervised the development of a solution for the early detection of avalanches. Globally avalanche fatalities are 150–200 per year.
- Developed a solution for detection of glacial lake outburst floods, solving the problem by sending early alerts, this natural disaster has taken more than 12,000 lives till 2016.

Advisor, Ex-Student Coordinator & Ex-Peer Mentor

August 2024 – Present

L33tL3g10n - Coding and Programming Club

Udaipur, Rajasthan

- Led weekly 2-hour classes on data structures, algorithms, entrepreneurship, and design thinking for fellow programmers.
- Coordinated weekly and biweekly LeetCode contests at my university and held sessions on competitive programming.
- Organized competitions including poster presentations, hackathons, and other events that have collectively hosted approximately 450 participants to date.

Innovation Design and Entrepreneurship (IDE) Bootcamp

January 2024

AICTE (All India Council for Technical Education), Wadhvani Foundation

Jaipur, Rajasthan

- Participated in a 5-day hands-on bootcamp focused on developing entrepreneurial skills.
- Ranked among top 5 teams at bootcamp and top 50 teams in India for the best pitches.

Project

Early Warning System for Glacial Lake Outburst Floods (GLOFs) <i>C, Design Thinking</i>	October 2024
<ul style="list-style-type: none">• A glacial lake forms as a result of glacier activity and poses a catastrophic flood risk when water accumulates. Around 15 million people are exposed to the threat of GLOF.• Designed a sensor network to continuously monitor lake currents, depth, and glacier movements, targeting 700+ high-alert glacial lakes and enabling real-time alert generation.• Using the collected data and satellite imagery, predictions can be made and alerts will be generated in real-time.	

Intelligent Early Avalanche Detection Using IoT <i>Internet of Things, Project Management</i>	October 2023
<ul style="list-style-type: none">• Avalanches worldwide pose a significant threat, causing human and economic losses, with climate change escalating the issue, impacting property and lives resulting in an annual death toll of 150+.• Built a cost-effective system using sensors, AI, and a mesh network to monitor and forecast avalanches.• Developed an early warning system that integrates real-time weather data, outperforming traditional radar-based systems, which typically trigger alerts 3 seconds after an event with 79% accuracy.	

Skills	Certificates
Programming Languages: C++, Python, HTML/CSS, SQL, Java	Google IT Support
Developer Tools: Visual Studio Code, Arduino IDE, Tinkercad	NPTEL Introduction to IoT
Technologies & Frameworks: Arduino, LoRaWAN, Circuit Design	NPTEL Digital Design
Soft Skills: Leadership, Project Management, Entrepreneurship, Problem Solving	

Leadership & Extracurricular	Achievements
Microsoft <i>Student Ambassador</i>	April 2025 – Present <i>Microsoft</i>
<ul style="list-style-type: none">• Hosted Microsoft Learn workshops, JS AI Build-a-thon Study Jams, covering various domains including Azure, AI and data science.• Participants completed more than 1000 modules all together in just 4 months.	GATE 2025 - Qualified
GeeksforGeeks <i>Campus Mantri</i>	February 2025 – Present <i>GeeksforGeeks</i>
<ul style="list-style-type: none">• Established the GeeksforGeeks Student Chapter at my university, providing students with exciting opportunities by connecting with GeeksforGeeks mentors.• Organized various events in collaboration with other GeeksforGeeks Campus Mantris of other universities.	Winner - MATHack 2.0 Online Hackathon
Student Council <i>Joint Secretary</i>	November 2024 – May 2025 <i>Sir Padampat Singhanian University</i>
<ul style="list-style-type: none">• Led 5 events in university's annual tech fest as the head of technical events.• Served as a bridge between students and university administration, collected student concerns and communicated them to university officials.	
IEEE Student Branch <i>Vice Chairperson</i>	September 2024 – Present <i>Institute of Electrical and Electronics Engineers</i>
<ul style="list-style-type: none">• Coordinated inter-college IEEE events and activities at my university with student branch.• Organized IEEE Ideathon and IEEE Day, hosting 150+ participants.	
Hackathon Team <i>Team Leader</i>	October 2023 – Present <i>Sir Padampat Singhanian University</i>
<ul style="list-style-type: none">• Coordinated on several projects, including the Smart India Hackathon winning projects. My team is also recognized at the IDE Bootcamp for the best pitch.	