

# Utpal Raj

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## Professional Summary

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Driven B.Tech Computer Science student (CGPA: 9.53) with strong fundamentals in data structures, algorithms, and full-stack development. Built end-to-end projects ranging from real-time web performance monitoring dashboards to AI-based computer vision and desktop GUI tools. Actively developing practical systems with React, JavaScript, Python, and backend technologies, with a focus on understanding real-world application behavior and performance.

## Education

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*B.Tech in Computer Science (Data Science)*

2023–2027

SRM Institute of Science and Technology, Kattankulathur

*CGPA:* 9.53

*Intermediate (Class 12)*

2020–2022

St. Thomas Senior Secondary School (CBSE)

*Percentage:* 88.8%

## Achievements

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- 1st Place – Web3/Crypto Track, OSSome Hacks 2.0 (GitHub Community SRM)
- 3rd Place – AI Project Expo, SRM Institute of Science and Technology

## Work Experience

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**Frontend Developer Intern – Optivix AI (Startup)**

Aug '25 – Oct '25

[optivixai.com](https://optivixai.com)

- Contributed to a growing AI-based startup by designing and developing its official website, improving brand visibility and user engagement by 14%.
- Implemented responsive layouts, optimized performance and SEO, and developed analytics dashboards to monitor visitor behavior and business metrics.
- Strengthened startup branding through modern UI/UX practices and cohesive design, aligning the web experience with the startup's AI-driven mission and outreach goals.

## Technical Skills

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**Languages:** C, C++, Python, Java, JavaScript

**Frameworks & Libraries:** React, Vite, Tailwind CSS, Express (REST APIs, basic WebSockets), Spring Boot

**Tools & Concepts:** Git, GitHub, Browser DevTools, Performance APIs, DSA, OOP, DBMS

# Projects

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- **Text Comparison Tool** GitHub  
*Python, Tkinter, NLTK, difflib* Mar 2024
  - Developed a desktop-based **NLP application** to compare textual documents word-by-word.
  - Implemented similarity scoring and difference highlighting using NLTK and difflib.
  - Achieved over **95% accuracy** in textual similarity detection.
- **Age & Gender Detection System** GitHub  
*Python, OpenCV, Deep Learning (Caffe)* May 2024
  - Built a **real-time computer vision system** to detect faces and predict age and gender.
  - Achieved **93% face detection accuracy** and 88% gender classification accuracy.
  - Integrated facial landmark detection to improve prediction stability.
- **Personal Text Editor** GitHub  
*Python, HTML, CSS, JavaScript, Tkinter* Aug 2024
  - Developed a lightweight text editor supporting basic formatting and file operations.
  - Implemented features such as bold, italic, font resizing, and file save/load.
  - Focused on clean UI design and smooth user experience.
- **Image Enhancement Tool** GitHub  
*Python, OpenCV, rembg, Pillow, Tkinter* Feb 2025
  - Developed a desktop-based **image processing tool** with real-time previews.
  - Implemented background removal, grayscale conversion, cropping, and Gaussian blur.
  - Integrated AI-based rembg for accurate background removal.
- **PerfWatch – Real-Time Web Performance Monitoring System** GitHub  
*React, JavaScript, WebSockets, Node.js, Express, Tailwind CSS* Jan 2025
  - Built a **real-time web performance monitoring system** tracking latency, error rates, and request throughput.
  - Developed a **client-side JavaScript SDK** to capture browser performance metrics.
  - Designed a React-based dashboard with live event streams and network waterfall views.
  - Implemented a Node.js + Express backend with **WebSocket-based real-time updates**.

# Certifications

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- Programming in Java – NPTEL
- Python 101 for Data Science – IBM
- Image Processing, MATLAB Onramp – MathWorks
- Deep Learning & Machine Learning – MathWorks
- C for Everyone – UC Santa Cruz (Coursera)
- Certificate of Achievement – HackWithIndia
- Problem Solving – SRM eLab Platform