



# HANNAH THANKAM ALEX

Final Year B.Tech Student  
Computer Science Engineering  
PES University, Bengaluru

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## EDUCATION

Degree	Institute/Board	CGPA/Percentage	Year
Computer Science	PES University, Bengaluru	8.7/10	2022-Present
Senior Secondary	Mar Thoma Residential School, Kerala	96.8%	2020-2022
Secondary	Mar Thoma Residential School, Kerala	95.4%	2019-2020

**Relevant Coursework :** Data Structures and Algorithms, Linear Algebra, Web Technology, Machine Learning, Database Management Systems, Data Analytics, Big Data, Deep Learning, Information Retrieval

## SKILLS

- **Programming Languages:** C(proficient),Python(proficient),Java(basic),Matlab(Moderate),HTML(moderate), CSS(moderate), C++(Basic), R(Basic), Rust(Basic)
- **Web:** React, MongoDB
- **Big Data & Data Processing:** Hadoop MapReduce, Apache Spark, Apache Kafka

## EXPERIENCE

- **Teaching Assistant – Data Structures and Algorithms, Advanced Data Analytics**  
*Department of Computer Science Engineering, PESU* June 2025 – Present
  - Conduct lab sessions and resolve queries for undergraduate students.
  - Evaluate coding assignments and exams.
- **Summer Research Intern**  
*Center for Computer Networks and Cyber Security (CCNCS), PESU* June 2024 – Jul 2024
  - Developed a dApp for secure legal document transfer using blockchain and Zero Trust principles.
  - Implemented smart contracts and MFA using Truffle, Ganache, MetaMask, and Twilio.

## PROJECTS

- **Sign Language Recognition and Speech Generation(CNN,MediaPipe,OpenCV)**  
Developed a real-time ASL sign language recognition system using Convolutional Neural Networks (CNNs) and MediaPipe providing a test accuracy of 96.8% with real time performance of 45ms/frames on normal webcams. The system translates hand gestures into text and speech, enhancing communication accessibility for the deaf-mute community.
- **Application Monitoring Dashboards(Docker,Apache Kafka,Grafana)**  
The Log Analytics Platform is designed to collect, process, and visualize log data in real time. It leverages Grafana for visualization, Kafka for real-time log ingestion, and a relational database for storage.
- **EmoStream: Real-Time Emoji Broadcasting System(Flask, Apache Kafka, Apache Spark, Python)**  
Designed a real-time emoji broadcasting system supporting more than 200 emojis per second across 4 clients with less than 200 ms latency, featuring scalable Pub-Sub architecture, real-time aggregation, and efficient micro-batch processing.
- **Criminal Record Information System(Python,MySQL)**  
Developed a role-based application to manage criminal records, cases, and complaints. Implemented features for police and victims, including case management, data visualization using matplotlib, and a secure audit trail with MySQL triggers and stored procedures.

## PUBLICATIONS

- Co-authored a research paper titled "*A Secure Method of Transferring Confidential Documents by Leveraging Zero Trust Principles and Blockchain Technology*", published in *ICTBIG 2023, IEEE Computer Society*.

## AWARDS

- Top 20% Scholarship Award – Semester 1 (8.77), Semester 2 (9.27)
- Distinction – Semester 3 (8.63), Semester 4 (8.00), Semester 5 (8.83)

## EXTRACURRICULAR ACTIVITIES

- HackerRank Certification for the skill Problem Solving(Intermediate)
- Completed a course on *What is Generative AI* by LinkedIn
- Kodikon 4.0 National Level Hackathon Participant – Selected as one of the 35 teams from over 322 submissions
- Volunteer, Hospitality Team - Managed guests and logistics at Maaya, the University's flagship event.
- Atlassian - Jira Service Management Fundamentals Badge
- AWS Educate Getting Started with Compute