Billakanti Saicharan

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EDUCATION

Amrita Vishwa Vidyapeetham, Coimbatore	*Aug 2023 – July 2027*
B.Tech in Computer Science with specialization in Artificial Intelligence.	**CGPA:** 8.12
Sri Chaitanya Junior College	*June 2021 – May 2023*
Board of Intermediate Education.	**Percentage:** 95.1%
Narayana Concept School	*June 2020 – May 2021*
Board of Secondary Education.	**GPA:** 10/10

SUMMARY

AI-focused B.Tech student with hands-on experience in **Machine Learning**, **Deep Learning**, **Computer Vision**, **Robotics**, and **DBMS systems**. Developed impactful solutions including a **robotic arm for injection automation**, **ST-GCN action recognition system**, **Bayesian Optimization-based material design model**, and a **full-stack placement management portal**. Strong ability to apply AI and analytical concepts to build reliable, real-world applications.

SKILLS

OS	Windows	**Databases**	PostgreSQL
Languages	C, C++, Python, SQL	**Web**	HTML, CSS, Node.js
Frameworks	PyTorch, scikit-learn, OpenCV	**Tools**	Git, VS Code, Google Colab, Figma
Coursework	DSA, ML, DL, OOPS, DBMS		

PROJECTS

Medical Assist Robotic Arm (Computer Vision + Control Systems)
- Built a **5-DOF robotic arm** for automated injection assistance using Python + CV.
- Implemented **camera calibration**, **ArUco marker tracking**, and **pose estimation** for precise arm alignment.
- Designed a **dual-optimizer controller (Adam + LM)** achieving ¡5mm accuracy.
- Achieved **40% faster convergence** through hybrid optimization.

Human Action Recognition Using ST-GCN
- Developed an **ST-GCN-based spatial–temporal model** for skeleton action recognition.
- Constructed **graph adjacency matrices**, normalized pose-keypoints, and integrated temporal convolutions.
- Trained using **PyTorch** with **LR scheduling** for stable and efficient convergence.

ML-Guided Perovskite Design (GPR + Bayesian Optimization)
- Modeled **bandgap + stability** using **4557 OQMD samples** with **Magpie descriptors**.
- Trained **Gaussian Process Regression (GPR)** models with strong MAE and R^2 performance.
- Applied **Bayesian Optimization** to identify **stable ABX$_3$ compositions** with target bandgaps.
- Demonstrated ML-driven **materials discovery** using probabilistic modeling.

Placement Management Portal (Node.js + PostgreSQL) — DBMS Project
- Designed a **fully normalized relational schema** with ER diagrams, indexing, and constraints.
- Built REST APIs for **authentication**, **job listings**, **resume upload**, and **application tracking**.
- Wrote optimized **SQL joins**, **triggers**, and **transaction-safe queries** for reliability.
- Improved DB performance with **query optimization** and schema refinement.

ACHIEVEMENTS

- Shortlisted for **Round 2 – Integration for AI/GenAI Hackathon 2025**.
- Qualified for **Round 2 – SASTRA Hackathon**, hosted by IIT Madras.

CERTIFICATIONS

- Completed the **Generative AI Mega Workshop 2.0** and built a **pitch-ready AI product** using **10+ AI tools**, hosted by Mr. Tezan Sahu (SDE II, Microsoft), conducted by NxtWave CCBP 4.0 Academy.

EXTRACURRICULAR ACTIVITIES

Volunteer – Anokha Tech Fest, Amrita University
- Assisted with **event coordination**, **technical setup**, **logistics**, and **registration management**.