Rithwik Bandi
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EDUCATION

S R University, School of Computer Science and Artificial intelligence, Warangal, TG **May 2027**
Bachelor of Technology in Computer Science and Engineering.
CGPA: 8.8/10.00
SPR School Of Excellence, Hanamkonda, TG **May 2021**
CGPA:10/10

EXPERIENCE

S R University – Warangal, TG **Aug 2023 – May 2027**

***Project Architect* – Smart Bin System** **Jan 2024 – May 2024**

- Developed a sensor-driven Smart Bin using **ultrasonic sensors and microcontroller** for automated waste-level detection, reducing overflow incidents by **~65%** and improving sanitation response time.
- Implemented an automated alert system minimizing manual inspection, cutting monitoring effort by **~40%** and improving operational efficiency.
- Designed collection optimization logic using fill-level data patterns, reducing unnecessary pickup trips by **~30%** and lowering fuel consumption.

Internship - AICTE – EduSkills **July 2024 – Sept2024**

- Built and trained ML models using **Python, Scikit-learn, Pandas, NumPy**, improving prediction accuracy by **18%** through feature engineering and preprocessing; reduced error rate by **22%** using hyperparameter tuning and cross-validation.
- Implemented ML algorithms such as **Regression and Decision Trees** to automate data analysis, cutting manual processing time by **35%** on datasets with **10k+ records**.
- Deployed end-to-end ML workflows from data collection to evaluation, improving decision-making efficiency by **30%** using performance metrics.

PROJECTS

Automated Timetable Analyzer & Free Slot Finder - SRU Time Table

- Developed a web application that processes raw college timetable Excel files into structured visual schedules using **Python, Pandas, HTML, CSS, and JavaScript**. Solved timetable readability issues for students and reduced manual schedule checking effort by ~70%.
- Built a timetable comparison engine to detect common free time slots across multiple schedules automatically. Helped students coordinate meetings and study sessions faster, **cutting planning time by ~80%.**
- Optimized data processing logic for faster analysis of large timetable files. Improved schedule analysis **speed by ~50%,** enabling quick downloads in **Excel and HTML formats** for sharing.

MarvelShowCase – Interactive MCU Explorer (Frontend)

- Built a high-performance, feature-rich Marvel Cinematic Universe explorer using **React 18, TypeScript, Vite, Tailwind CSS, and Framer Motion.** Delivered a visually immersive platform for browsing MCU movies, series, and characters in chronological order.
- Implemented advanced UI engineering including **animated page transitions, dark/light theming, interactive timeline view, and modular component architecture.** Improved user navigation experience and content discovery through structured data rendering and responsive design.
- Designed scalable frontend architecture with Context API state management, reusable UI primitives (ShadCN), and route-based code organization. Optimized performance and maintainability while enabling smooth SPA navigation and future feature extensibility.

Personal Loan Approval Prediction using ANN

- Built a deep learning model using Artificial Neural Networks (TensorFlow/Keras) to predict personal loan approval based on financial and demographic features. **Achieved 91.3% model accuracy** with optimized architecture (**128–64–32 neurons**) and **Adam optimizer.**
- Performed feature engineering (custom feature *ApprovalBoost*) and data preprocessing on a real-world Kaggle dataset. Improved prediction performance through input normalization, data cleaning, and class-balance handling.
- Evaluated model using Precision, Recall, F1-Score, and Binary Crossentropy loss, ensuring robust classification performance. Designed system with potential integration into real-time loan decision systems and explainable AI extensions.

TECHNICAL SKILLS

- **Programming:** Python | C | Java
- **Web:** HTML | CSS | Java Script | PHP
- **Databases:** SQL | PLSQL | MongoDB
- **Coursework:** DSA | Operating System | DBMS | CN
- **Tools:** Visual Studio Code
- **Source & Version Control:** Git | GitHub
- **Frameworks:** Flask | Django
- **Other Skills:** Data Analysis, Machine Learning, Data Science

ACHIEVEMENTS

SR University – Warangal, Telangana **Aug 2023 – May 2024**

- Ranked in the top 3% of the university, demonstrating consistent academic excellence across all subjects.
- Recognized for outstanding academic achievement during the 2024-2025 academic year.