

SAI GANGADHAR POTLURI

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TECHNICAL SKILLS

- **Languages & Core:** Python 3, Data Structures & Algorithms (DSA), Object-Oriented Programming (OOP)
- **Backend & Web Frameworks:** FastAPI, Flask, RESTful API Design, Dynamic State Control
- **Databases & ORM:** SQL, SQLite, PostgreSQL, SQLAlchemy ORM, Schema Design, Transaction Safety
- **Tools & Serialization:** Git, GitHub, VS Code, Linux Environments, JSON Serialization, CSV Streaming

TECHNICAL PROJECT SHOWCASES

SolarMatrix Analytics Hub | *FastAPI, Async Python, SQLite In-Memory Threading, Chart.js*

- **High-Throughput Ingestion:** Engineered an asynchronous, non-blocking network gateway designed to ingest high-frequency IoT solar telemetry data packets without thread starvation.
- **Concurrency Architecture:** Bypassed traditional database write-locks by implementing an asynchronous background worker pool operating over shared in-memory relational thread pools.
- **Active Fault Detection:** Authored an algorithmic rule engine to scan incoming multi-variable data fields for hardware structural anomalies and stream automated error triggers to a dynamic line-chart monitoring interface.

Full-Stack Personal Finance & Analytics Ledger | *Python, Flask, SQLAlchemy, SQLite, Render*

- **Relational Schema Design:** Designed complex database relations enforcing strict indexing constraints (**NOT NULL**, Foreign Key dependencies) to preserve data integrity across transaction models.
- **Cryptographic Protection:** Implemented robust user session authentication utilizing cryptographic hashing algorithms and token state tracking to decouple unique workspace streams securely.
- **Stream Processing:** Engineered dynamic budgeting logic matrices and data calculation pipelines capable of processing dynamic category-wise analytics and generating memory-efficient CSV data statement exports.

Flashcard Learning Engine & Simulator | *Python 3, OOP Blueprints, JSON Data Layers*

- **Algorithmic Scheduling:** Developed a localized command-line implementation of the Leitner Spaced-Repetition system using customized array manipulation logic to graduate data boxes based on performance tracking intervals.
- **State Preservation:** Applied precise JSON serialization protocols to build a lightweight persistent storage engine that saves application user state metrics seamlessly across runtime execution lifecycles.

Solo Capstone: Solar Tracker Irradiance Optimizer | *MATLAB, Simulink, MPPT Control Logic*

- **Feedback Modeling:** Designed and executed feedback control loop simulations from scratch to evaluate physical photovoltaic cell responses under highly volatile atmospheric irradiance profiles.
- **Algorithmic Maximization:** Programmed a Perturb and Observe (P&O) Maximum Power Point Tracking (MPPT) matrix to automatically optimize real-time energy extraction efficiency metrics.

PROFESSIONAL EXPERIENCE

UNext Learning | Sr Business Development Executive | Mar 2025 – Jan 2026

- Automated structural auditing checks on incoming user onboarding data pipelines to eliminate data ingestion errors and significantly scale reporting speed metrics.
- Modeled historical conversion metrics and business performance indicators to isolate pipeline operational bottlenecks.

Unacademy | Business Development Associate | Mar 2024 – Jul 2024

- Managed high-volume customer workspace onboarding streams and executed meticulous technical requirement analysis.
- Evaluated engagement datasets to deploy consultative problem-solving interventions, increasing user retention metrics.

Hygiene Big Bites | Kitchen Operations & Logistics Manager | Oct 2023 – Feb 2024

- Oversaw resource planning and automated inventory optimization systems utilizing structural data logs.
- Reduced operational layout overhead by introducing data tracking workflows into daily fulfillment sequences.

OPTCL | Power Systems Analysis Intern | B.Tech Training Sequence

- Parsed power distribution datasets to model load-flow variations and evaluate critical substation overload thresholds

EDUCATION

- **Indian Institute of Technology (IIT) Bhubaneswar**
Bachelor of Technology (B.Tech.) in Electrical Engineering
Core Focus: Computational Logic, Control Feedback Loops, Power Systems Analytics, Matrix Mathematics

LEADERSHIP & ACHIEVEMENTS

- **Core Team Member:** Entrepreneurship Cell (E-Cell), IIT Bhubaneswar – Headed structural event coordination, operational logistics, and resource budgeting frameworks.
- **Varsity Athlete:** Basketball Team, IIT Bhubaneswar (2016–2018) – Represented the institute in inter-IIT tracking tournaments.