DEVANSH SINGH

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SUMMARY

Award-winning **Software and AI Developer** recognized with **12+ national and global awards** in hackathons and technical competitions. **Published IEEE Researcher**, **Peer Reviewer**, and **PyPI Author** with over **4,000 downloads**. Experienced in developing scalable, data-driven software and deploying **AI-powered solutions** for real-world applications. Focused on open-source innovation, applied artificial intelligence, and building efficient, production-grade systems. Currently pursuing a **B.Tech. in Computer Engineering (2nd Year)**.

SKILLS

Programming Languages	Python, C++, Java, JavaScript (ES6+), SQL, Bash, Markdown, JSON
Web & App Development	React, Node.js, Express, Flask, HTML, CSS
Databases	MySQL, MongoDB, SQLite
AI & Machine Learning	NumPy, Pandas, Scikit-learn
Tools & Platforms	Git / GitHub, VS Code, Jupyter Notebook, Linux
Software Engineering	Object-Oriented Programming, Data Structures & Algorithms, REST APIs
Other Skills	Problem Solving, Team Collaboration, Technical Writing

PROJECTS

ChronoMap – Time-Versioned Key-Value Store for Python
pip install chronomap — 4K+ downloads • PyPI Page Aug 2025 – Present
Python, Library, Async Systems

- Engineered a production-ready Python library for time-versioned data management with rollback and audit capabilities, enabling **traceability across 1,000+ key-value entries**.
- Implemented **async I/O, thread-safe locks, and advanced query filters**, improving concurrency handling and reducing latency by **35%**.
- Achieved **95% unit test coverage (100+ tests)** ensuring code reliability and maintainability.
- Published on **PyPI (4,000+ downloads, 20% MoM growth)**, showing strong developer adoption.
- Enabled JSON and Pickle persistence with compression and backward compatibility, **improving storage efficiency by 40%**.
- Adopted by **20+ developers** for configuration versioning and time-series analytics workflows.

EvoFusion Ultimate – Hybrid Surrogate-Assisted Optimization Framework
GitHub Repository May 2025 – July 2025
Python, Machine Learning, Optimization, Metaheuristics

- Designed and implemented a **hybrid optimization framework** combining **Evolutionary Algorithms, CMA-ES, and Bayesian Optimization** to solve complex, mixed-variable optimization problems.
- Developed an **ensemble surrogate model** (Gaussian Process, Random Forest, MLP) achieving **95–98% prediction accuracy** across benchmark datasets.
- Reduced computational cost by **80%** through surrogate-assisted evaluations, accelerating convergence in high-dimensional search spaces.
- Integrated **batch Expected Improvement (q-EI)** and **Kriging Believer heuristics**, enhancing the exploration–exploitation balance and reducing optimization time by **60%**.
- Enabled **multi-fidelity and constraint-aware optimization**, tested on **1,000+ simulation runs**, demonstrating robust scalability and adaptability.

ACHIEVEMENTS, HACKATHONS & MEDIA FEATURES

HackSphere 2025 – Global Hackathon – 3rd Place

INCEPTIA 2025 – Global Hackathon – 2nd Place

National Institute of Technology Karnataka's BfB - National Hackathon - Special Recognition Award

HacktoberFest - National Hackathon - 1st Place

TENET 2025 – National Hackathon – 3rd Place

20th Engineering Today (Innovate Sphere 2025) – National Hackathon – 1st Place

Techathon 2.0 – National Hackathon – Best Innovative Solution Award

CyberKavach 2025 – National Tech Event – 1st Place

NextGen 2025 – National Tech Competition – 2nd Place

Convene 2025 – National Tech Competition – 2nd Place

Tantraudgama 2.0 (2025) – National Tech Competition – 2nd Place

TechUtsav 2025 – State Tech Competition – 2nd Place

Drone Innovation Challenge 2024 – State Tech Competition – 1st Place

InterCollegiate Hackathon 2024 – State Tech Competition – 1st Place

Featured in Navrashtra, Prabhat News, and NavBharat Newspapers (2025)

PUBLICATIONS

Delta Encoding and Predictive Modeling for Lossy Time-Series Compression Using Adaptive Linear Updates
IEEE 3ICT 2025 (Accepted)

DMS4096+: Enhancing Cryptographic Strength and Efficiency through Advanced Key Generation
IEEE 3ICT 2025 (Accepted)

SMEE: Self-Mutating AES-GCM Framework for Adaptive Encryption
IEEE 3ICT 2025 (Accepted)

Parallel Task Scheduling and Dynamic Offloading for Deep Learning and Matrix Computation: APTOS Framework
IEEE 3ICT 2025 (Accepted)

Sentinel Adornments: IoT Integrated Smart Jewelry for Augmented Women's Safety
International Journal of Emerging Technologies and Innovative Research (JETIR) - View Paper

DMS-4096 Cryptography Algorithm
International Journal of Current Science (IJCS) - View Paper

Enhancing Defence Capabilities by Integrating Mini Drones with Payloads
International Journal of Current Science (IJCS) - View Paper

EDUCATION

GH Raisoni International Skill Tech University, Pune 2024 – 2028 (Expected)
B.Tech. in Computer Engineering CGPA: 8.0 / 10
Relevant Coursework: Data Structures & Algorithms, OOP, DBMS, Machine Learning, Software Engineering