

Lehar Sai Sankalp Dasari

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EDUCATION

Virginia Tech, Blacksburg, VA

2023-Present

Major: B.S. in Computer Science | **Minor:** Cybersecurity

Expected Graduation: Dec 2026

GPA: 3.51/4.0 | **In Major GPA:** 3.61/4.0 | **Dean's List:** Spring 2024, Fall 2025 | **President's List:** Spring 2025

Relevant Coursework: Data Structures and Algorithms, Discrete Mathematics, Computer Organization I and II, Software Design and Data Structures, Applied Combinatorics, Graph Theory, Multivariable Calculus, Linear Algebra

EXPERIENCE

Co-Founder & AI/ML Lead

Jun 2025-Present

Virginia Tech IDPro Research: CarbonQapture

Blacksburg, VA

- Leading rapid prototyping of ML models for CO₂ capture, leveraging Python, Scikit-learn, and model selection tools to support enterprise-grade AI PoCs in a research-driven, collaborative environment.
- Transitioning from neural networks to interpretable models (**linear/logistic regression**) to identify key MOF features.
- Applying **Bayesian Information Criterion (BIC)** to select optimal models, targeting 15% higher accuracy over neural network baseline.

R&D Team- Sensing Sub Team

Sep 2024 – Present

GraVT Design Team

Blacksburg, VA

- Developed real-time rocket tracking system using **Image Detection** and **Machine Learning with OpenCV and TensorFlow**.
- Led the transition from hardware-based altimeters to computer vision, decreasing component costs by **\$2000 per semester** while maintaining tracking accuracy
- Accelerated object detection runtime by **30%** through refactoring TensorFlow-based models into optimized C/C++ code, improving responsiveness and precision, enabling more accurate real-time data processing.

Software Engineering Intern

Jun 2024 – Aug 2024

Prospect Infosystem Pvt. Ltd.

Hyderabad, India

- Built full-stack web applications using **Java (Spring Boot)** for **RESTful APIs** for backend development and Angular for frontend Development, with **Postman** for API testing.
- Implemented error logging via Splunk to proactively trace and resolve backend faults in Apache Kafka message pipelines.
- Contributed to an Agile and scrum environment, following **OOP** and version-controlled distributed system workflows.

PROJECTS AND HACKATHONS

[DNAVault](#) | Python, NumPy, GitHub, Git, React

Jun 2025

Personal Project

- Designed a hybrid encryption system combining **AES-128** with **Kyber -512 (Post-quantum Key Encapsulation Mechanism)** to secure genomic DNA data, which is immune to **Shor's algorithm** and withstands quantum attacks in polynomial time.
- Implemented a **two-level** encryption approach by encrypting AES round keys with Kyber for post-quantum resilience, Brute-forcing the AES-128 encryption requires **2^{128} operations** ($\sim 10^{18}$ years classically, $\sim 2^{64}$ operations with the right Grover's algorithm), making the system unbreakable under current and future threat models.
- Transformed DNA sequences into **4x4 binary matrices** compatible with AES, enabling symmetric encryption of biological data.

[CarbonQapture](#) | Python, Pandas, PyTorch, NumPy, Scikit-learn, React, Git, GitHub

Apr 2025

Hackathon- Bitcamp 2025 Winner | Best Hack Promoting Public Health by Bloomberg

College Park, MD

- Built a **Quantum-AI** framework using Python to simulate and design new Metal-Organic Frameworks for CO₂ capture, achieving **98.3% accuracy** from the Neural Network.
- Trained on **324,000+** MOF structures, the neural network, found **8000+ suitable** for CO₂ capture and ranked them based on effectiveness.
- Weighed **50+ properties** per MOF to calculate scores and **generate** 10 novel high-performing MOF candidates with all their properties to **generate a CIF file** that can be used to visualize the new structure.
- Presented model performance and system design to judges, securing Bloomberg's Best Hack promoting Public Health award.

[FinPoint](#): AI Powered Credit Card Fraud Detection | Python, NumPy, Pandas, Scikit-learn

Feb 2025

Hackathon- Hackviolet 2025

Blacksburg, VA

- Built a real-time fraud detection system using **XGBoost** (Extreme Gradient Boosting) trained on transaction data to identify anomalies such as geolocation shifts, time-based inconsistencies, and spending volatility.
- Achieved **99.95% accuracy**, **98-99% precision**, and **97-98% recall**, outperforming baseline models such as regression models.
- Weighed and processed **30+** transaction features to detect and flag fraudulent behavior in real-time.

SKILLS

Languages: Java, C, C++, Python, SQL, JavaScript, Typescript

Frameworks and Libraries: Angular, Spring Boot, React.js, PyTorch, NumPy, Pandas, Scikit-learn, TensorFlow, OpenCV

Tools: Splunk, Apache Kafka, AWS, Docker, Git, GitHub, Postman

Operating Systems: Windows, Linux