# ANAND NAIR

🌐 Website   ✉ anair6@huskers.unl.edu   📞 (312) 375 2391   in LinkedIn   GitHub

## Education

**BS in Computer Science and Mathematics, Minor in Physics**      **Expected Dec 2026**
University of Nebraska-Lincoln
○ Coursework: Data Structures and Algorithms, Embedded Systems, Quantum Computing, Differential Equations, Computer Organization, Robotics, Computer Systems Engineering, Physics I-III, Discrete Structures, Calculus I-III, Unix Programming, Electrical & Electronic Circuits, Linear Algebra.

## Experience

**Founding Machine Learning Engineer, Linagle** ↗      **Jun 2025 – Present**
Synthetic Medical Data Generation Startup
○ Founded Linagle AI, a startup focused on generating high-quality synthetic medical images for research and healthcare applications.
○ Designed and implemented deep learning pipelines for synthetic MRI, CT, and X-ray data generation.
○ Skills: Generative AI, Palantir Foundry, synthetic data pipelines, entrepreneurship, leadership.

**Undergraduate Research, Particle Physics & Cosmic Rays (CROP)**      **Aug 2024 – Present**
Department of Physics and Astronomy, University of Nebraska-Lincoln
○ Studied cosmic ray air showers and high-energy cosmic particles.
○ Installed and operated detectors across Nebraska as part of an NSF-funded project; analyzed time-stamped data for cosmic ray coincidences.
○ Skills: Data analysis, scientific communication, teamwork.

**Undergraduate Research, Fabrikant Labs**      **Jan 2024 – Jul 2024**
Department of Physics and Astronomy, University of Nebraska-Lincoln
○ Research Focus: Investigated implications of quantum tunneling on nanotechnology and quantum computing.
○ Simulated tunneling effects using Python and Qiskit to analyze electron behavior in nanoscale devices.
○ Developed numerical models for tunneling probabilities based on Schrödinger's equation.
○ Skills: Quantum simulation (Qiskit), numerical methods, problem-solving, scientific communication.

**Undergraduate Research Assistant, Yao Labs**      **Nov 2023 – May 2024**
Department of Computing, University of Nebraska-Lincoln
○ Collected and analyzed Reddit health data using API integration.
○ Retrieved, cleaned, and processed data to study public health sentiment.
○ Skills: API integration, data analysis, NLP, Python, Pandas.

## Publications & Patents

○ A Modular Feedback Framework for Escaping Barren Plateaus in Variational Quantum Algorithms.
○ Provisional Patent Application No. 63/751,868 - *Timera: A Time-Immutable Blockchain*, filed July 30, 2025 (Inventor)

## Certifications & Training

○ Oracle Cloud Infrastructure 2025 Certified Architect Associate ↗
○ Oracle Cloud Infrastructure 2025 Certified Generative AI Professional ↗
○ Quantum Fundamentals and Computing – Q-CTRL ↗
○ IBM Professional Machine Learning Engineer Specialization ↗
○ AI on NVIDIA Jetson Nano Certification ↗

## Projects

**QLAA (Quantitative Language for Advanced Analysis)**
○ Designing a programming language to solve the "two-language problem" in finance and data science, unifying the productivity of Python with the performance of C++.
○ Architecting with built-in safety features like native decimal types for financial accuracy, strong static typing, and immutable data structures by default.
○ Incorporating native DataFrames and a simplified concurrency model (coroutines/actors) as core constructs to streamline data analysis and parallel processing.
○ Skills: Language Design, Compiler Theory, Financial Engineering, Concurrent Programming.

### Brain Tumor Detection from MRI Images
- Built a CNN with TensorFlow/Keras to detect brain tumors from MRI scans.
- Preprocessed images, applied data augmentation, and achieved strong accuracy.
- Skills: Deep learning, medical image analysis, Python, TensorFlow.

### Song Lyrics Generator with LSTM
- Developed an LSTM-based model to generate lyrics from a multi-genre dataset.
- Tokenized text, generated sequences, and trained model for natural language generation.
- Skills: NLP, LSTM, TensorFlow, Python.

### AI Research Agent Web App
- Built a web-based AI research assistant using HTML, TailwindCSS, and JavaScript.
- Integrated Google Gemini API for real-time data retrieval and source citations.
- Skills: Web development, API integration, JavaScript.

### Fraud Detection Using Graph Neural Networks
- Built a GNN to detect fraudulent credit card transactions using graph-based feature engineering.
- Constructed transaction graphs, trained GNN models, and evaluated with metrics.
- Skills: GNNs, PyTorch, NetworkX, Python.

### CNN for CIFAR-10 Image Classification
- Designed and trained a CNN to classify CIFAR-10 dataset images with 72% accuracy.
- Implemented convolution, pooling, and dense layers with performance visualization.
- Skills: CNN, TensorFlow, Python, NumPy, Matplotlib.

### Galaxy Evolution Study Using JWST Data
- Analyzed galaxy data from JWST to study morphology, star formation, and redshift evolution.
- Skills: Astrophysics research, Python (Astropy), data analysis.

### Mini Drone-Based Surveillance System
- Designed a conceptual framework for drone navigation, obstacle detection, and data collection.
- Skills: Drone system design, sensor integration, documentation.

### Coin Picking Robot
- Designed autonomous and remote controls for a robot using STM32, EFM8, and Xbox controller.
- Implemented nRF24L01 transceivers for communication and autonomous movement logic.

## Honors and Awards
- Appreciation from NASA for Galaxy Collision project proposal.
- Accepted into Quantum Cryptography School for Young Students-2020 at the University of Waterloo(2020).
- Winner, Science Quiz Competition by Manorama magazine.
- Adi Shankara Young Scientist Award (2019).
- State-Level Champion, BigQ Challenge (2019).
- Global Laureate Scholarship, Emerging Leaders Scholarship worth $70,000

## Technologies
**Languages:** C++, C, Java, Python, HTML, CSS, Qiskit

**Frameworks/Tools:** TensorFlow, LangChain, keras, Oracle Cloud, Huggingface, openCV, PyTorch, pandas, Matplotlib, Seaborn, NumPy, Astropy, GitHub, APIs, Microsoft SQL, scientific hardware integration (scintillation counters, GPS systems)

## References
Available upon on request.