

SIDDARTH BOGGARAPU

Bangalore, India

APPLIED ML · PRODUCTION SYSTEMS · PHYSICAL SIMULATION

siddarthb078@gmail.com · +91 9606754584 · github.com/Siddarthb07
siddarthb07.github.io/siddarthb · linkedin.com/in/siddarth-boggarapu-12411339b

"I build systems that operate under uncertainty — across interpretability, finance, healthcare, and physical simulation. My work combines machine learning, backend engineering, and physics-based modeling to produce systems that are measurable, explainable, and grounded in real-world constraints."

SELECTED PROJECTS

Anima — LLM interpretability instrumentation (open source, MIT)

github.com/Siddarthb07/Anima

Forward hooks capture hidden states of Hugging Face causal LMs while they generate; trained probe heads read valence, arousal, and uncertainty per token, live. Guard policy recommends abstaining when readouts are unreliable — run against HaluEval and TruthfulQA; scored 94.0 by a 5-model benchmark council. REST + WebSocket streaming, React dashboard, live demo on Hugging Face Spaces.

Corvex · multi-host campaign correlator (open source, MIT)

github.com/Siddarthb07/corvex

Stitches weak signals across hosts into one attack timeline. Sealed held-out eval packs (precision · recall · F1 · benign FCR); live containment stays gated behind dry-run safety controls by default.

GeoQuant — quant trading research platform (MIT)

github.com/Siddarthb07/GeoQuant

MLP daily/intraday signal models, news-sentiment scoring, walk-forward backtesting with fees and slippage modeled inside the optimizer, Alpaca paper-trade routing. Every run exports report.json + equity curves.

Health-AI — clinical risk scoring with safety gates (MIT)

github.com/Siddarthb07/Health-AI

Runtime path uses ACC/AHA Pooled Cohort Equations and FINDRISC — actual clinical models. Abstains when inputs are missing or out of range; 17-biomarker lab timeline, Fitbit / Google Fit sync.

SIMULATION & APPLIED PHYSICS (SELF-DRIVEN)

Drone-Vortex-Ring-Simulation — reduced-order CFD of vortex ring state

github.com/Siddarthb07

Kelvin circulation scaling, Helmholtz thin-ring self-induction, viscous core decay, ring-ring interaction. Built to find a drone's unstable descent zones before flying them.

Propeller-simulator — BEMT solver

Blade Element Momentum Theory across RPM x pitch x blade count; GUI + CLI, CSV sweep logging.

vortex-tracker — OpenCV measurement pipeline

Measures vortex-ring diameter and propagation speed from high-speed image sequences.

EXPERIENCE

Athera — Founder

2025 – present

AI automation and workflow systems for small businesses — backend integrations, lead workflows, and sites.

Vegam Solutions — Engineering Intern

Q1 2026

Built a text-to-SQL RAG pipeline with schema linking and SQL validation. NDA-restricted; details not public.

Elevyx — Founding Developer

2025 – May 2026

Backend architecture and lead-recovery automation for real-estate teams (elevyx.in).

Vegam Solutions — Engineering Intern

Q3 2025

Prototype water-based air-filtration systems; hardware-first weekly build / test / refine loop.

Indian Institute of Science (IISc) — Summer Intern

May 2025

10-day internship on vortex rings. The open-source CFD simulators above are independent, self-driven work.

HARDWARE & MAKER WORK

Autonomous quadcopter and hexacopter builds, frame up — motors, ESCs, flight controllers, radio; PID tuning and propeller selection informed by the BEMT solver. Rovers, automated plant-watering, home automation on ESP8266-class microcontrollers. Raspberry Pi NAS with distributed-computing experiments.

SKILLS

Languages	Python · TypeScript · C · GLSL
ML	PyTorch · Hugging Face · LangChain · vLLM
Web	FastAPI · Next.js · WebGL · Three.js
Data / Infra	Postgres · Qdrant · Redis · DuckDB · Docker · Linux · GitHub Actions · n8n

EDUCATION & BEYOND

VIBGYOR Group of Schools, Bangalore (2011 – present). Competitive skating; football (CBSE tournaments, Goa Globe); badminton; swimming. Model United Nations — 1 year. 50+ hours community service.