

Ahitagni Das

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EDUCATION

RICE UNIVERSITY

Houston, TX

B.S. Electrical and Computer Engineering, B.A. Materials Science and Nano-Engineering, GPA 3.93/4.0

2027

Relevant Coursework: Data Structures & Algorithms, Machine Learning, Computer Networks, Python, Linear Algebra, Multi-variable Calculus, Differential Equations, Signals and Systems, Circuit Analysis & Design

Activities: Trustees and Sarofim Scholar, President's Honor Roll, ECLIPSE Competitive Rocketry, Competitive Sailing, ML@Rice

Interests: Quant Trading, ML Engineering, SWE, Deep Learning, Computer Vision & Imaging, Quantitative Research

PROFESSIONAL EXPERIENCE

LOTUS HEALTH, MIT SANDBOX

Remote

Founding Engineer

Sept 2024 - Present

- Leading Full-Stack development of an AI-driven medical software stack using React, FastAPI, Python, Twilio, Deepgram, OpenAI, and Cartesia.
- Work directly with founders & clinical advisors to drive strategic product development decisions & shape product roadmap.

RICEU, VEERARAGHAVAN GROUP

Houston, TX

Undergraduate Research

Aug 2024 - Present

- Research the applications of Control-nets based Video Diffusion Models for Video Stabilisation (to be submitted to CVPR 2025)
- Deploy and assess advanced Deep Learning models using PyTorch; Proficient in using Mitsuba Renderer, OpenCV, Matplotlib

RICEU, OSHMAN ENGINEERING DESIGN KITCHEN (OEDK)

Houston, TX

Design Mentor

Aug 2024 - Present

- Design Mentor supporting teams in the engineering design process to solve real-world problems with active clients.
- Projects include designing a non-invasive infant suction-measuring device in collaboration with UT Health & designing a wearable device to monitor posture during sports activities for individuals recovering from leg injuries.

MIT MEDIA LAB, NANO CYBERNETIC BIOTREK (SARKAR LAB)

Boston, MA

Visiting Research Scientist

May - Aug 2024

- Fabricated 50 μm CMOS compatible injectable devices to power colloidal bio-robots, capable of storing 0.25 μJ
- Developed ML models to predict spontaneous neuron firings, achieving 86% accuracy over 100k+ Patch-Clamp datapoints
- PyTorch, Matplotlib, MATLAB, Pandas, Clean Room Fabrication, SEM, AFM, TEM, XRD, Comsol Multiphysics

RICEU, AJAYAN GROUP

Houston, TX

Undergraduate Research

Aug 2023 - Aug 2024

- Submitted to ACS Nano, a research paper on Hexagonal-Boron Nitride based Sodium and Lithium Ion Batteries
- Published in The Journal of Material Science, a review on The Efficient Sodium Ion Batteries in Electric Vehicles
- Fabricating Efficient Low Temperature Li-Ion Batteries using Industrial Waste Derived Carbon (w/ Saudi-ARAMCO)

INDIAN INSTITUTE OF TECHNOLOGY (NANOFLUIDICS LAB)

Guwahati, India

Visiting Research

Jun - Aug 2022

- Discovered a novel method to convert plastic waste to B/N-Doped Graphene, to generate 120 mV & 0.8 μA from 6g of waste
- Won the First Special Award at the Int'l Science & Engineering Fair 2023, & a \$60K+ scholarship to the King Fahad University

ARDA, HARVARD INNOVATION LABS

Remote

Strategic Alliance Lead

Sept 2022 - Jun 2023

- Orchestrated a partnership with the UN Environment Assembly to introduce Arda's cold chain drone deliveries in Nigeria
- Formed a report on the African Pharmaceutical Logistics Market (30+ companies) to support business relations and development

CLUBS & EXTRACURRICULARS

RICEU, ECLIPSE

Houston, TX

Lead, Payload Team

Mar 2024 - Present

- Leading a team of 20+ engineers & managing a \$3000 budget to develop the electronics & software of a Hybrid Engine Rocket Payload for the 2025 SpacePort America Cup
- Engineering a deployable 10 \times 10 \times 30 cm (3U) Hyperspectral Imaging (HSI) Camera for monitoring agricultural cover in Houston

PROJECTS

Klix (GitHub), Automate phone call outreaches for clinical trials, sales, etc. Scaling into a product with Rice Lillie

2025

Deep Learning Deep Dive (GitHub), Implemented Alex-Nets, U-Nets, to NeRFs & GAN-Diffusion Hybrids

Ongoing

CTC, Black-Scholes model returning 4.7x over randomised 3-month periods on European-Style Option Contracts

CTC 2024

Schedulize (GitHub), a ML based task and calendar management system WebApp that works in sync with GCal

HackRice 2024

Autonomous Rocket Recovery System, Python, RaspberryPi, IMU, Microcontrollers, GPS

Rice Engineering Showcase, 2024

AWARDS

Cornell Trading Competition (CTC), Placed 4th out of 40+ teams

2024

Excellence in Undergraduate Research, George R. Brown School of Engineering, Rice University

2024

International Science and Engineering Fair, First Special Award

2023 & 2022

CERN Beamline, Top 24 teams, Scintillator Afterglow Effect due to Nuclear Transmutation (SAENTs)

2022

Spirit of Ramanujan Fellowship, John Templeton Foundation

2022

Summer Math Academy Fellow, University of Pennsylvania

2022

SKILLS

Technical Skills: Python, PyTorch, Scikit-learn, Einos, Pandas, NumPy, Matplotlib, RAG, HTML, React, Tailwind CSS, Java, JavaScript, TypeScript, Node.js, Express.js, Flask, MongoDB, Vector Databases

Laboratory: Cleanroom Fabrication & Photolithography, XRD, AFM, TEM, SEM, FTIR, Battery Fabrication & Testing