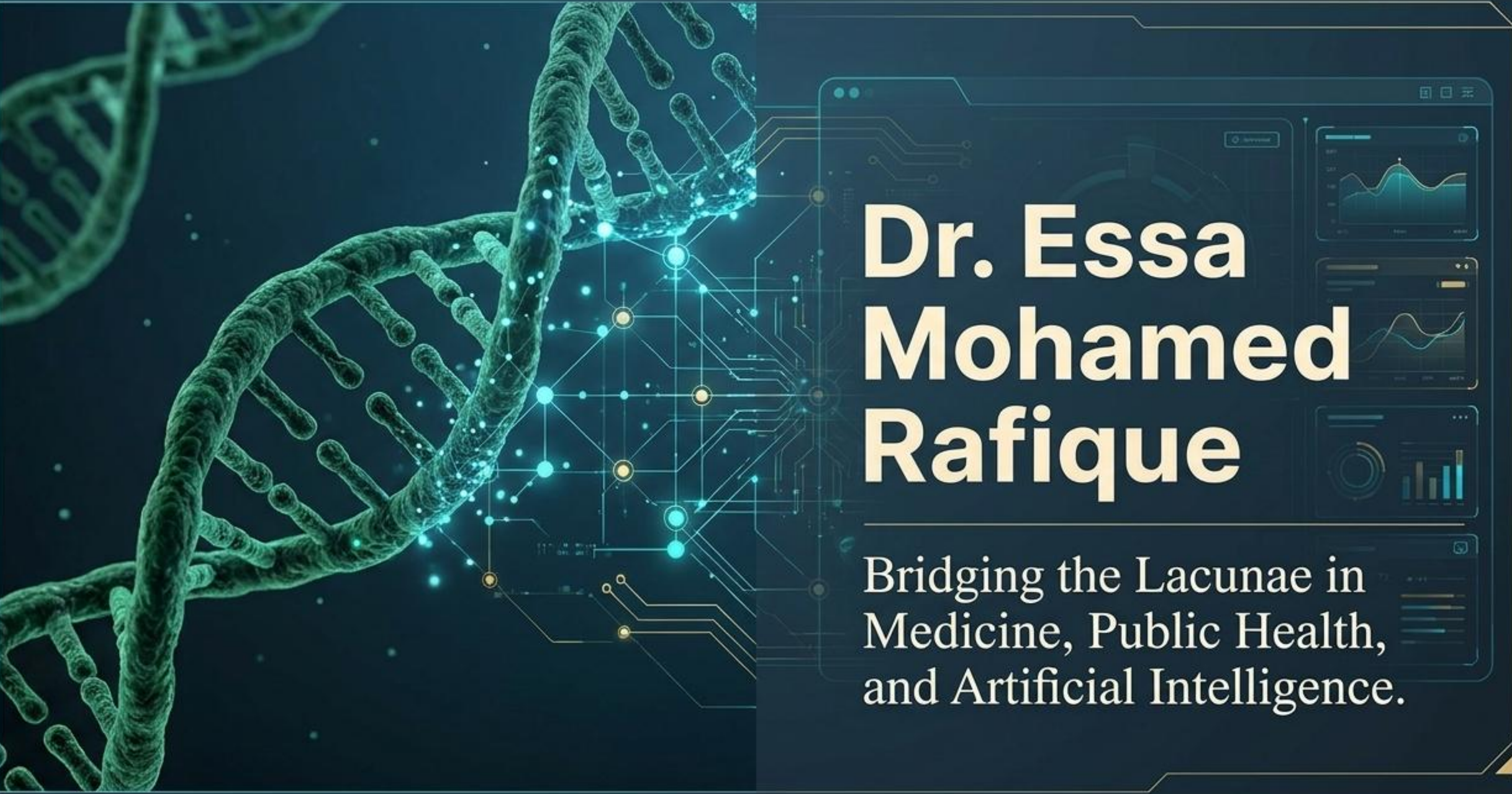


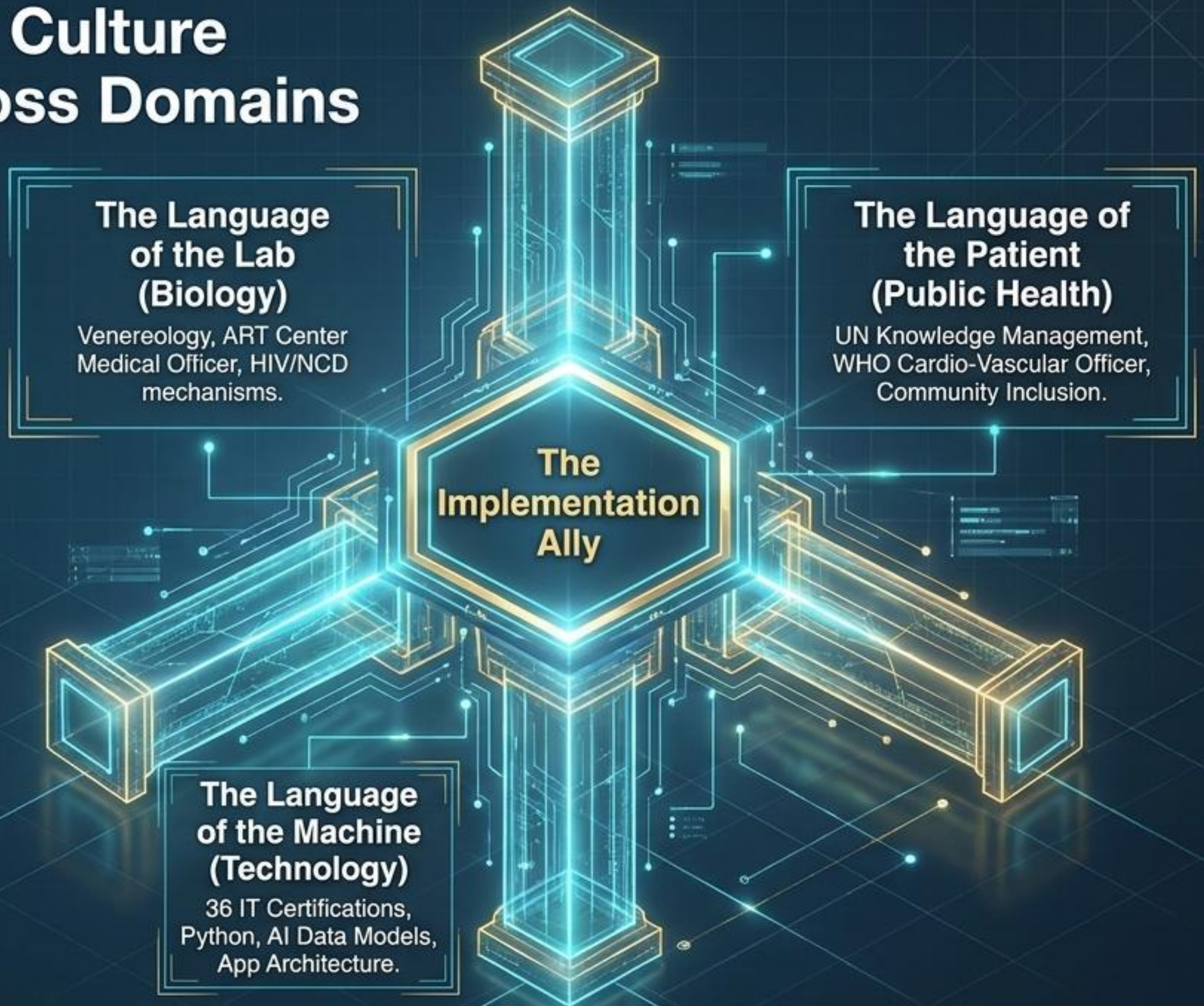


Dr. Essa Mohamed Rafique

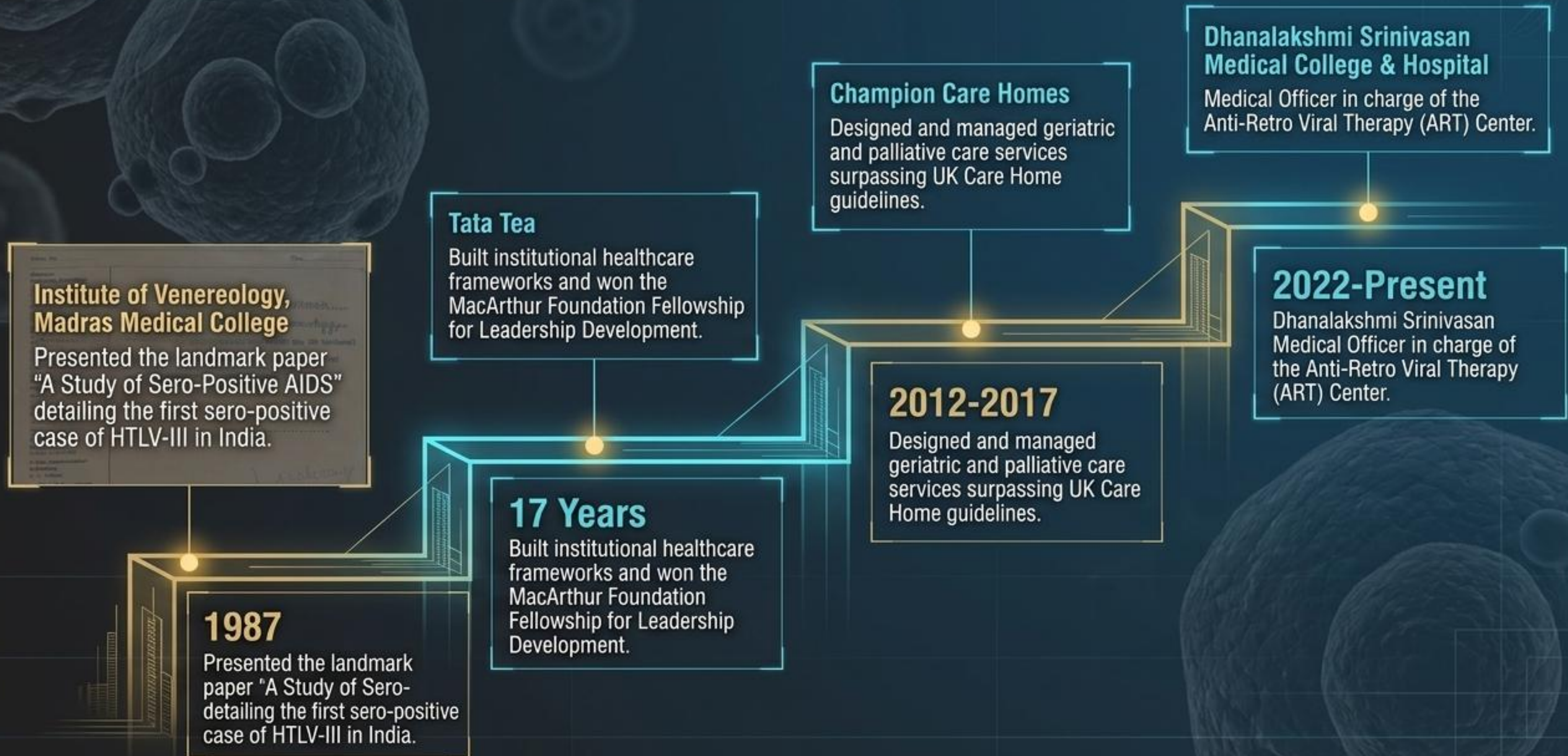
Bridging the Lacunae in
Medicine, Public Health,
and Artificial Intelligence.

The Clinician-Scientist Culture Demands Fluency Across Domains

True scientific influence requires seamlessly navigating the microscopic mechanics of the virus, the macroscopic realities of the patient, and the computational intelligence required to connect them.



Decades of Clinical Rigour and Specialisation



Scaling Clinical Expertise to Global Public Health Leadership



World Health Organization (WHO)

Cardio-Vascular Health Officer (CVHO)

Directed non-communicable disease (NCD) and COVID-19 data analysis across multiple districts.



United Nations (UNAIDS)

Resource Person and Moderator

Directed public health capacity building and extracted community knowledge assets for national policy formulation.



MacArthur Foundation

Fellowship for Leadership Development

Focusing on sexual health, women's rights, and empowerment.

The India Hypertension Control Initiative (IHCI) in Action

CORE INSIGHT PANEL



Only **1 in 12** adults with hypertension in India has their blood pressure under control.

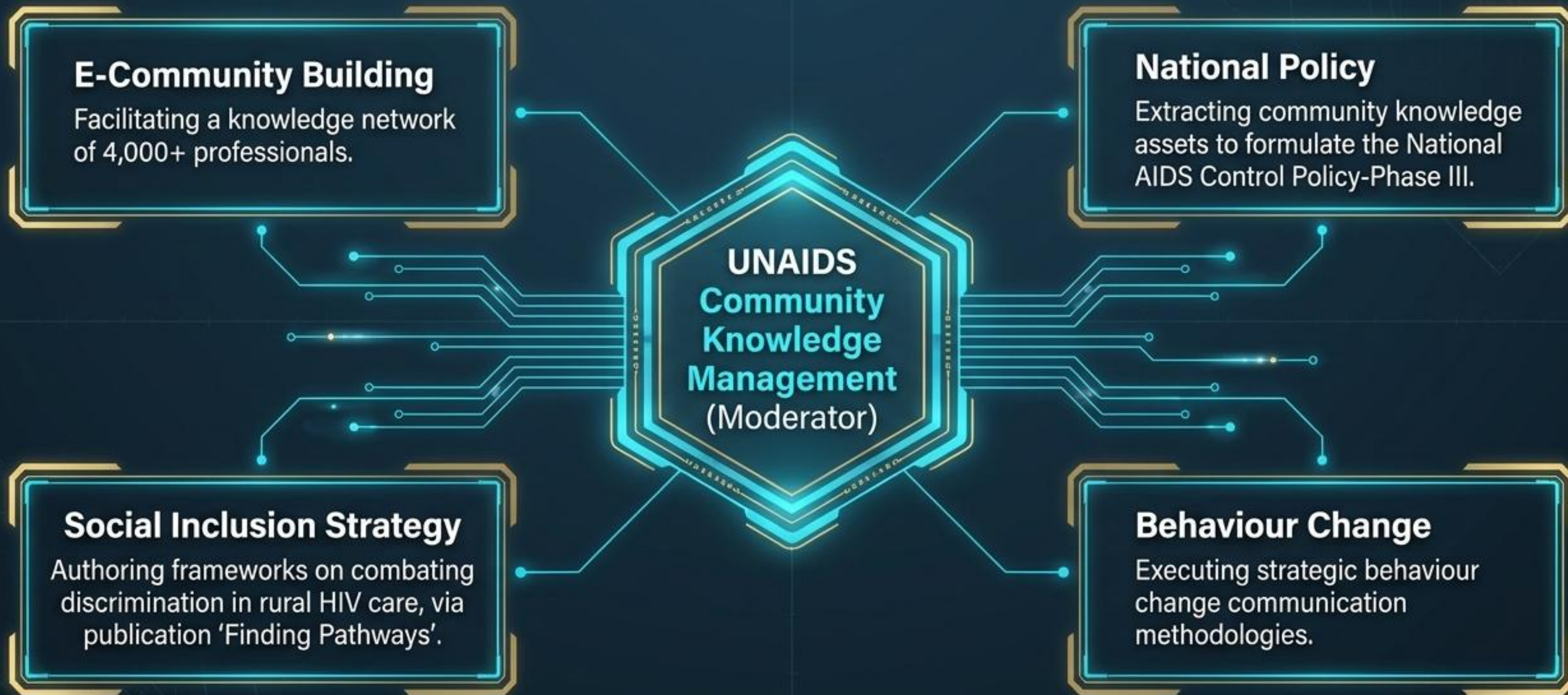
(Drawn from 2018–2020 national analysis paper)

EXECUTION PANEL

District-Level Impact (2017–2021)

- ✓ Managed NCD and COVID-19 knowledge networks in Wayanad and Kozhikode.
- ✓ Deployed targeted health innovations in Wayanad (featured in the National WHO Newsletter, 2021).
- ✓ Published longitudinal patient follow-up overviews and comparative regional performance indexes.

Empowering Communities Through Social Inclusion



The Digital Health Architect

Open-Source Ecosystem:
23+ Applications Developed

ACLS Protocol Trainer:

Interactive web-based simulation engine for cardiac emergency management protocols.

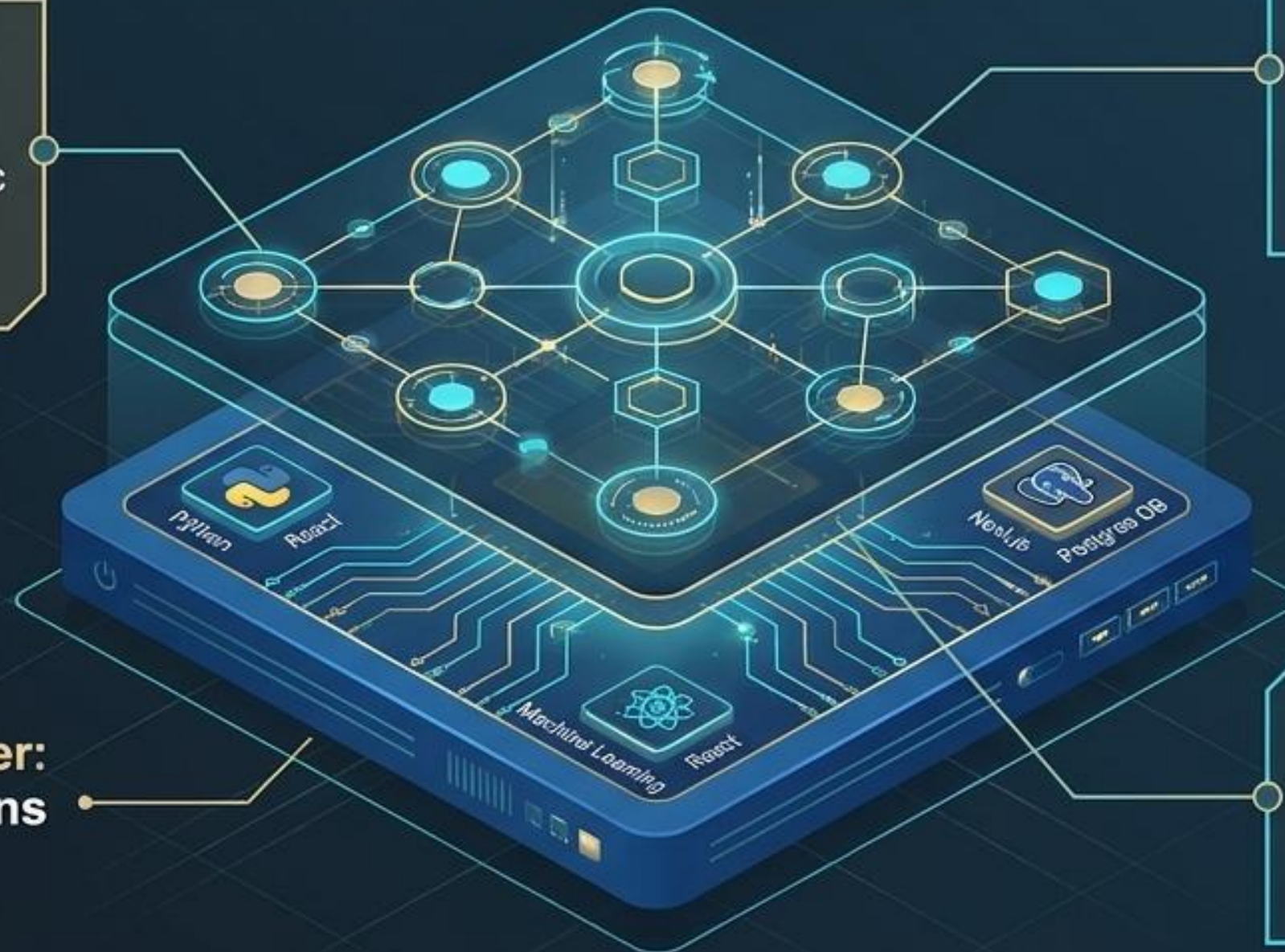
Co-Check:

A digital self-assessment tracker rendering client-side evaluation models for community competence.

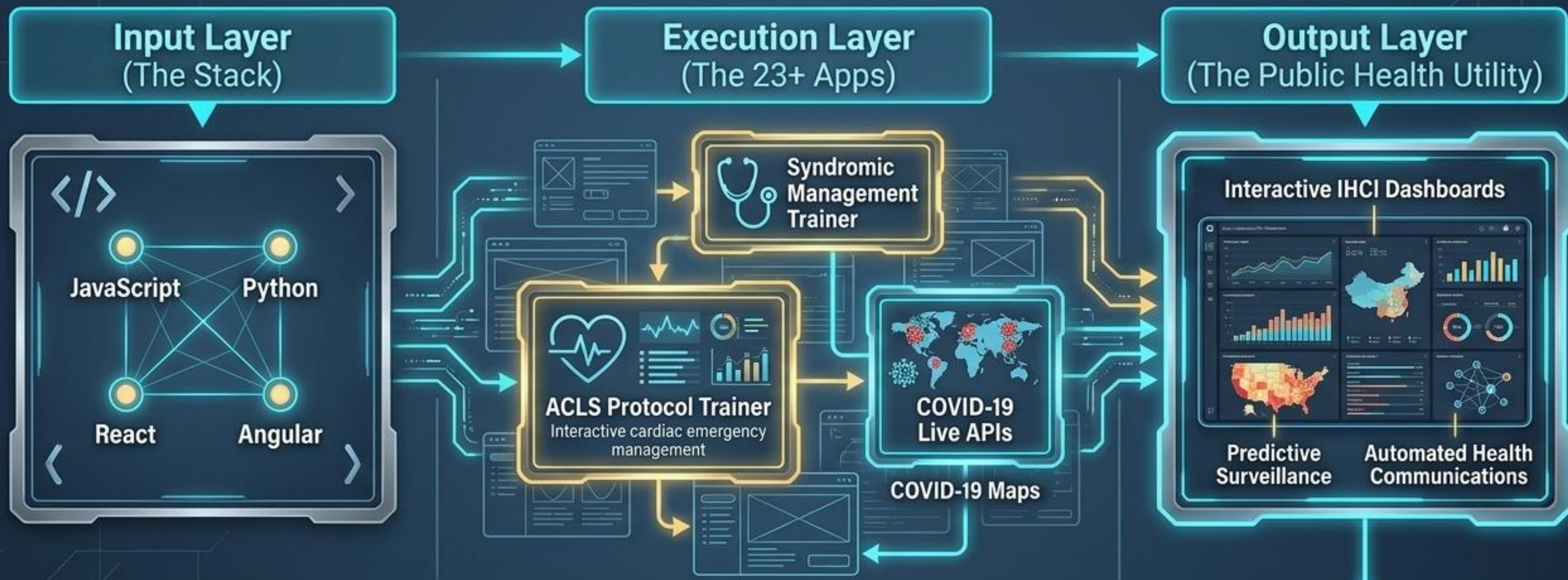
Foundation Layer:
36 IT Certifications

IHCI E-Certificate Node:

An automated public health education engine for clinical module exams.



The App-to-Impact Framework



Dr. Rafique's unique combined expertise in software engineering and epidemiological data (STATA/Epi-Info) directly translates to sophisticated public health analytics.

Knowledge Management at Scale: 49 Distinct Products



Academic Curation and Interdisciplinary Authorship



Editorial Leadership

Convenor of the Board of Editors for the multi-specialty Thanjavur Medical Journal (TMJ).



Community Development

Lead author of 'Monitoring & Evaluation in Community-Led Development', detailing participatory assessment frameworks.



Scientific Research

Published descriptive observational studies on NACO guidelines regarding Post Exposure Prophylaxis (PEP) of HIV among intern doctors.



UN Directives

Authored operational guidelines for district-level HIV prevention programmes for adolescents in community settings (UNICEF).

Structural Evolution: From Vertical Silos to Integrated Care



Traditional Vertical Silos



- Fragmented biological data and manual reporting.



- Isolated HIV care decoupled from holistic patient health.



- Rigid administrative structures incapable of rapid epidemiological response.



Rafique's Integrated Model



- Harmonised data streams with automated API dashboards.



- Joint HIV-NCD surveillance (normalisation of services).



- Administrative agility driving continuous, dynamic clinical support.

The New Frontier: Bridging the JVRC Lacunae

BIOLOGICAL DATA

Clinical
HIV Care

NCD
Metabolic
Markers

Subtype-C
Virology

Accelerated computing focusing exclusively
on structural proteomics and virology.



COMPUTATIONAL INTELLIGENCE

AI Predictive
Models

AlphaFold cloud
pipelines predicting
3D Nef/Tat
protein changes

Machine Learning
for Genotype-
Phenotype
Mapping

Modern HIV and CVD joint studies face a critical disconnect.
Dr. Rafique provides the intelligence bridge between raw clinical
biological reality and advanced computational proteomics.

Immediate Operational Readiness

		Python		Machine Learning			React/Angular		
Essential Needs	Data Harmonisation	99%	87%	27%	76%	32%	20%	13%	17%
	Algorithmic Automation	99%	85%	76%	98%	79%	30%	18%	17%
	Backend Systems	99%	77%	77%	75%	28%	23%	44%	13%
	Project Management	99%	68%	79%	79%	73%	20%	98%	16%
		Python		Machine Learning			React/Angular		
		Tools							

The Head Start

By bringing 36 specialised IT certifications to the laboratory alongside 30+ years of clinical practice, Dr. Rafique bypasses months of foundational training, arriving fully equipped to handle raw data harmonisation and algorithmic automation immediately.

MAKING A DIFFERENCE DIFFERENTLY

Technology should not replace teaching—it should amplify learning. True leadership leverages diverse disciplines to achieve comprehensive academic rigour and practical, real-world solutions.

Dr. Essa Mohamed Rafique

M.B.,B.S., D.V., D.T.D., Dip Web Media., D.I.S.

rafique@the-constellation.org | Digital Portfolio: cvemrafi.vercel.app