AI in Clinical Practice

Bridging Healthcare Gaps with Speech Recognition

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Tobi Olatunji MD

- Ex Research Scientist at AWS Health AI
- Technical advisor and Visiting Scientist at Harvard
- 3x Technology Patents
- 250+ citations for 17 ML Papers

Georgia Tech — MSc Computer Science (c), Georgia Institute of Technology

Healthcare Management, Yale School of Management

UNIVERSITY OF SAN FRANCISCO — MSc Medical Informatics, University of San Francisco

MB;BS, College of Medicine, University of Ibadan

Founder, Intron

Machine Learning Research Scientist, Health AI, Amazon Web Services

Clinical NLP Scientist, Enlitic Inc, San Francisco, California

Clinical Data Scientist, Cambia Health Solutions (BlueCross BlueShield of Pacific Northwest)

Health Data Fellow, Insight Data Science

About Intron

Building speech-to-text, text-to-speech, and voice agents for 500+ accents and 60+ languages across Africa—helping clinics, courtrooms, and call centers 10x productivity for over a billion users in emerging markets.

We are the Voice AI backbone for a billion African users.

What is Voice Tech?

Speech-to-text
converts spoken words or phrases into human-readable text.

Text-to-speech
converts written text into spoken words

Global Partners

Google
PATH
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Harvard Radcliffe Institute
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KEY INSIGHT

Digitization: Broken Promises

Clinician **keyboard** struggles prolong patient **wait times**. Angry patients impact revenue

Typing over 40 pages/day increases workload and exhaustion, worsening **burnout** and retention

Clinicians resort to shorter, sparse, **copy/paste notes** lowering documentation **quality**

Productivity decline & longer hours hinder clinician **adoption**, wasting $$$ invested in infrastructure & software

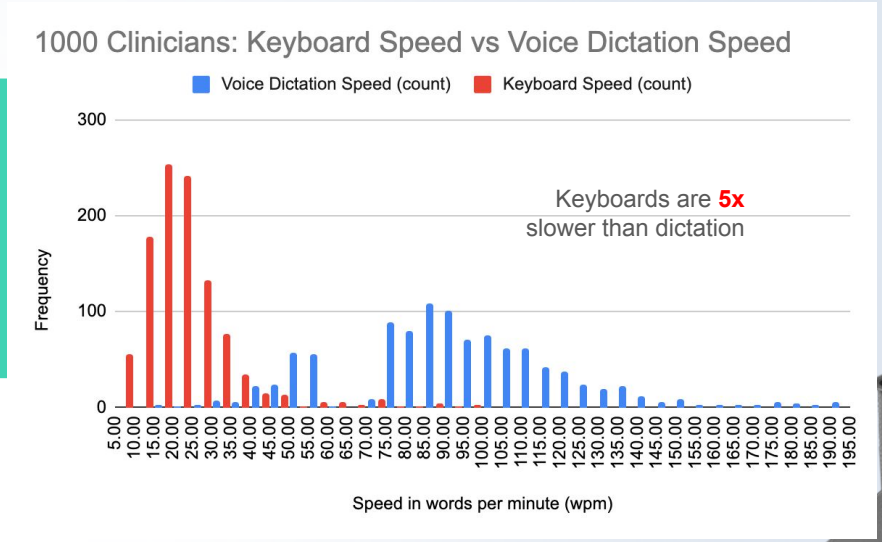
KEY INSIGHT

Keyboards: The Culprit

It is impractical to expect overworked clinicians to type an extra 40-pages of notes per day

40 heavy workload patients per day

22 keyboard speed words per minute



intron

Sahara surgical

the world's first ambient surgical note assistant designed for the **modern Operating Room.**

Post-Op Notes ready before you scrub out

Back-to-back long surgeries → mental & physical exhaustion.

Notes written or typed hours later → **omissions, errors, quality**.

Significant cognitive load with drafting notes from memory or editing templates

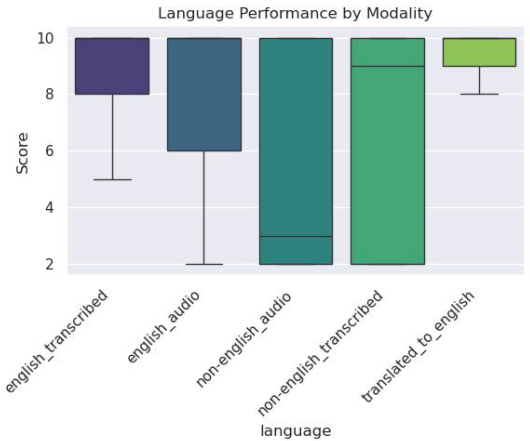
Documentation steals time from patient care, and time **generating more revenue**

Additional time at work is less time at home with your families

Voice-Enabled Community Health Workers

Preference for, length, and detail (quality) of queries or documentation with voice vs keyboard

LLM accuracy with audio vs text questions, English vs Pidgin vs Local Languages



PATH

Gates Foundation

Success Stories

At the forefront of healthcare innovation, trusted globally. We've cut documentation time by **7x, benefitting 40+ hospitals across four countries.**

University College Hospital, Ibadan

Aminu Kano Teaching Hospital, Kano

Meridian Health Group, Nairobi

Zenith Medical & Kidney Center, Abuja

Korle Bu Teaching Hospital, Accra, Ghana

Barau Dikko Teaching Hospital, Kaduna

Babcock University Teaching Hospital, Ilisan-Remo

Police Clinic Calabar

Asiwaju Bola Ahmed Tinubu Health Center, Ifelodun LCDA, Lagos

Federal Medical Centre, Asaba

Challenges

Diversity: Multiple accents, languages in same hospital

Errors with Medical Vocabulary

Errors with African Names

Hallucinations

- Silence
- Background Noise
- Background speakers

Segment Loss

LLM Spelling Auto-correction errors

Latency

- Expected latency
- Perceived latency

Privacy, Trust, Regulatory Issues

Accent Anxiety: Alexa, Siri, Google Maps

Untested: Mindspace, workload, and innovation diffusion

Privacy Concerns:

- **Doctor - Doctor**; **Doctor - Patient**; **Patient - Patient**
- Hospital - Third Party; Country - Third Party (Data Sovereignty)

Appearance, Optics (patients don't like microphones or headsets)

Infrastructure Inconsistencies: internet, distance from mic, device recording quality, device age/specs

Implementation challenges: lack of IT Support, identifying champions, limited departmental coverage, specialty selection (e.g. Radiology)

Policy/Regulation: Data Sovereignty expectations with no local GPU capacity, cloud vs on-prem