

Interview Questions for Chris Orwa

June 26, 2018

The purpose of this interview is to contribute towards pluralizing understandings of what science and technology work around the world is. Feel free to answer this based on the scale you feel most comfortable - your own community of practice; network of scholars; at the level of the city / country / region / continent; etc.

The first section of the interview will focus on your engagement and lessons learned from iHub Research. The second half of the interview will focus on your current role and your thoughts on the general trajectory of science and technology research in the region. I will edit the interview and share it back with you to review. Once you okay it (and agree to its release), we will upload to PECE platform to be part of the iHub Research exhibit for 4S 2018 conference (and beyond).

- 1) Can you please explain who you are including your name, current title, and organization. In what capacity did you work with iHub Research?

My name is Chris Orwa, a Data Scientist at Safaricom. I worked at iHub Research as a Data Scientist and later as Lead, Data Science.

- 2) Reflecting back now, 8 years later, what do you think was unique about the type of work that iHub Research conducted?

iHub Research had a unique work structure that made client projects fulfil the objectives of learning (capacity building), creating awareness of research gaps in the community, and delivering on client needs.

- 3) In your own opinion, what were the core aspects that made iHub Research what it was?

iHub Research's core aspects included;

- Rapid prototyping of research ideas
- Impactful
- Openness

- 4) Can you give a few concrete examples of how iHub Research embodied those principles (experimentality, open sharing of research, diverse forms of knowledge)? What was the modality of the experiment? Why was it pursued? Who was the intended audience?

Example 1: Rapid Prototyping

PHEME – Tracking Rumors Online

This project entailed built machine learning tools to track rumors on Twitter. The basis of the project was to conduct an experiment to find ways in which rumors are propagated online. This experiment was conducted as an exploratory analysis of data gathered from thematic concerns online. The PHEME Project was a 36-month EU-funded partnership between universities (Sheffield, Saarlandes, Modul Vienna, King's College London, Warwick) companies (Ontotext, ATOS, Ushahidi) and end-users (SwissInfo) to study and build tools for tracking veracity in social media.

iHub Research's Data Lab was contracted by Ushahidi to provide data science support to the project. The intended audience for the research was the European Union group studying spread on rumors.

Example 2: Impactful

Umami – These research projects were initiated to find insights into the Kenyan sphere. In the duration of the project, iHub Research engaged government institutions, partner organization, and the general community in order to push for implementation of research findings. The mode of the experiment was combination of quantitative analysis by data scientists and qualitative analysis by research.

The research was pursued in order to study the spread of dangerous speech in Kenya. Methodology developed in the project was further deployed in Ethiopia, South Sudan, and Nigeria to track and study the propagation of dangerous speech during election periods. The intended audience for the research were NGOs, government institutions and the civil societies concerned with the spread of dangerous speech.

Example 3: Openness

3VS – 3Vs of crowdsourcing was a project initiated by iHub Research to study the viability of crowdsourcing election information. The experiment was undertaken during the time when Twitter was emerging as an alternative source of information that were not covered by mainstream media. In this project, the aim was to find the viability of using Twitter as a source of information during the Kenyan election in 2013.

The mode of the experiment was data mining tweets collected during the election period and finding corroborating evidence of lack thereof in mainstream media reports. Intended audience for the research was the general community working on crowdsourcing initiatives in the country. Findings were shared with the public in various forms e.g events and blog posts – tools and code developed in the projects were also open-sourced.

5) Can you explain a bit more about what iHubR data science was? How were you involved?

iHub Research data science initiative was initially a unit within the research team that provided in-depth analysis to researchers. Later it spun out to be one of the departments within iHub. While being house at iHub Research, my role was of a data scientist in which I performed machine learning on large sets of data, developed tools for scraping data and coordinated work for build automation tools for the research team.

Later I was the lead for the data science unit at iHub and my responsibilities were to develop analysis methodologies, manage people and look for business opportunities where data science can be used to solve problems. In addition to crafting research projects around data, and building Data Science capacity within the institution and the larger iHub community.

6) What kinds of groups did the data lab engage with? Who was/is interested in data science in Africa? What kinds of projects were you working on?

The Data Science Lab team engaged two types of groups; upcoming data scientists and industry practitioners. In Africa, technology startups formed the bulk of people interested in data science – it was a focus on how they could use data science to make their products better.

Projects under the mandate of the data lab ranged from predicting rainfall using satellite images in Tanzania to developing data sharing protocols for 8 Eastern African states. These incorporated machine learning work and data policies and laws.

7) How did your initial work with iHub R as well as your experience building out the data science lab help to bring you to where you are today? What were important lessons or values that you picked up along the way?

I joined iHub Research as data mining consult to provide machine learning expertise in analyzing large Twitter dataset. Subsequent to the project, my role was changed to junior data scientist and assigned similar roles where I could perform machine learning on large datasets. Part of the lessons learned while working as a data scientist was on pushing the limits and not be afraid to experiment and fail, in addition to being open and doing wide consultation.

A lot of things I learnt in data science at iHub was through interactions with other people who had done similar things (mentors), and experimenting. There was room to experiment for purposes of learning, also weekly show and tell to encourage presentation of findings, and a blogging platform to share with the world what you had learned or currently undertaking.

8) Can you explain a bit more about your current work and company? What kinds of issues are you working on?

Currently I work at Safaricom PLC as Data Scientist. Our department is tasked with innovating products for the main business from a data perspective. We therefore work on issues that affecting customers by understanding their behaviors through the data collected.

- 9) What factors do you believe were important to give rise to iHub Research? Are there other groups doing work similar to iHub Research? If yes, who? If not, why not?

iHub Research success came from the gap in the market for relevant research for the general community. One pillar that led to rise of iHub Research was the mode of distributing research findings. Instead of academic papers, the idea of holding events around research finding and preparing blog posts and easily understandable writing created a large audience for the research.

To my knowledge there is no other entity in Kenya that is undertaking similar work to iHub Research. Part of the reason is because the mode of operation of iHub Research is a risky affair (from a business perspective). It operated as startup company undertaking research – established research companies prefer a time-tested business model with well-defined business model and analysis methodologies.

- 10) Related question - Where else has critical work on science and technology been happening in the Kenyan/African research context? Who is doing it?

In Kenya, certain government institutions are doing a lot of work in science and technology. Example is KEMRI that does good medical research and is known to produce stellar Statisticians. IBM Research in Kenya is also undertaking critical work in science and technology by finding areas in the society where technology can make a difference and earn a profit.

- 11) Are there shifts in who is doing this work? If so, why do you think that is?

The hasn't been a major shift in who is doing the critical in science and technology since the work requires time and resources which other types of institutions do not have. Example, startups lack the capital and time do in-depth analytical work, commercial institutions have short-term KPIs which hamper long term research.

- 12) What themes/topics/ideas/concepts are garnering interest for future directions of science and technology studies in Kenya/East Africa/ Africa at large? Why do you think that is?

Blockchain and Artificial Intelligence the two technologies that are fast garnering interest in Kenya and Africa. For Blockchain, it promises to eradicate corruption which is endemic in the continent – developers and entrepreneurs are hoping to cash in on this craze and institutions are willing to take up the solutions. Artificial Intelligence has been taunted as the key to unlock secrets in data – since almost all collect data, they are hoping their growth will come from unlocking the data secrets.