

**FS REPORT****Name****Year and term for exchange**

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**Country for the project**

Tanzania

**Degree programme**

Industrial Engineering and Management, Machine Learning Track (TIEMM)

## A solo adventure to the classroom

### Before departure

I started looking for research topics and locations after I watched the presentations of previous MFS students in the fall term 2023. With only a couple of weeks before the KTH FS deadline I realized I want to look at generative AI in education. I met with my (potential) supervisor at the time, and he suggested Tanzania as a place to go. I went back home and started cold emailing any relevant people in the AI space that I could find in Dar es Salaam and eventually made my way into the LinkedIn circles for non-profit AI people in the country. This led me to Essa, my local supervisor and founder of the Tanzania AI Community.

I booked our first meeting (online, on a Saturday) which went very well and afterwards I spoke with my (now confirmed) KTH supervisor about the next steps. I ended up applying for KTH FS and Karl Engvers grant and was lucky to get both, which essentially funded my entire trip.

In terms of preparations, it mostly involved getting my visa and taking any appropriate vaccinations. For vaccinations I went to VaccinDirekt in Stockholm and got it all sorted there in just a couple of hours, including prescriptions for malaria tablets and some other vaccinations I took on the spot. I opted for a tourist visa because I was in the country for less than 90 days but I was concerned whether this could become an issue when I was there since I needed permission from some municipal councils to conduct observation studies at public schools. In all, they never asked for my visa and it all turned out okay. Also, note that I only booked the first 10 days of accommodation before arrival and used that address in my visa application.

I did a little bit of Duolingo Kiswahili (which is the dominant language there) before I left but this was to little help and I opted to learn on the job instead, which was more fun.

### Upon arrival

I arrived toward the end of January 2024 and I was received warmly by four members from the Tanzania AI Community on my first day, including Essa, who offered dinner and drinks.



I was hoping to spend the first two weeks selecting the right schools on which I could do research. However, there was a lot of bureaucracy in terms of researcher access and permissions from the municipal council of each school, which meant that I only really started conducting observations and interviews in the 4<sup>th</sup>/5<sup>th</sup> week and onwards. However, 3 weeks of intense field studies was enough for me to get the data I needed. In total I was in Tanzania for 8 weeks and 1 day.

### **Financials**

In general, accommodation, food, and transport are much cheaper than in Sweden. However, this varies significantly depending on how local you want to get. The more local, the cheaper.

The city has local markets where you can get fresh produce for low prices, but you'll have to negotiate, and paying a slightly higher price than the locals is something you could accept, because either way it will be multiples cheaper than in a grocery store in Sweden. However, if you're not in the mood for that and want a taste of home you can go to some of the larger grocery stores in the city (typically called something like Shoppers Plaza). Here you will find food mostly bought by expats and tourists with price ranges like Sweden. The major exception is that anything with globally popular brands will cost you an arm and a leg. Be careful in the cereal aisle, you might see two packets of oats where one costs 50 cents and the other costs 12 dollars (prices are in Tanzanian shillings though – a good metric is that 10,000 Tsh is around 4 dollars at the time of writing this).

For transportation, Bolt is the way to go and try to go by boda (motorbike) or bajaji (tuk tuk). Most trips around 10 minutes should cost between 1 and 2 dollars. I typically used a trusted driver that I got along with very well called Frank (+255655210732). I paid him a little extra per trip but he never once complained about how much I gave him and was almost always available, even taking the initiative to drive me to some schools at 6 in the morning and translating for me when I went to the municipal councils.

To not get ripped off, try to ask locals you trust how much things should cost (or someone who has been there before), and show that you know the currency and price ranges well when negotiating. Most of the time they let you pay a fair price if you suggest that the alternative is nothing. Also, if any police officer stops your ride and asks for money for some random reason, ask them for a receipt or a card reader and they'll normally let you off the hook.

### **Accommodation**

I followed a different approach to most regarding this. Since I was travelling alone, I didn't want to stay in an apartment the whole time. Instead, I went from hostel to Airbnb on a weekly basis to make new friends and this worked very well. The housing conditions were quite good, and I typically spent between 4.5-6 kSEK per month. During the entire stay, I almost never knew where I would be staying a

week ahead of time, and this gave me a lot of flexibility to move closer to the schools I was conducting research with during a shorter period.

**Project**

My project involved conceptualizing, designing, and building a generative AI tool specifically for Tanzanian secondary school teachers. I did it in cooperation with the Tanzania AI Community for the TIEMM thesis in Machine Learning.

A typical day of field studies involved taking a bajaji to a school at 7am in the morning, meeting with a teacher and then following them throughout the day, including their lessons with students. Toward the end of the day, I usually interviewed them. Afterwards I often worked on my thesis research in a café with WiFi where I would typically order food as well.



At the start of my work, I also presented the topic of retrieval augmented generation in schools as a keynote speaker at a Tanzania AI Community run event.



Today, the project, called Twiga, has been very well received and the Tanzania AI Community wants to build and scale it as their new flagship product.

**Country**

Tanzania is a very beautiful country with a warm and welcoming population. I never felt unwelcome in Dar es Salaam nor in any of the other places I visited like Zanzibar or Arusha. Furthermore, there was much more life at night than you would see in Stockholm, even on weekdays. However, the most

surprising thing for me was how hectic Dar es Salaam as a city is. Driving on the roads there was quite incredible to watch, especially during rush hour, where there was very little coordination and often 4-way intersections with no traffic lights. Though it was evident that Dar es Salaam is known nationally for being hectic and warm.

### **Leisure and social activities**

The two things I did which were separate mini trips from my time in Dar es Salaam was a safari with my family near Kilimanjaro and scuba diving with a friend on Zanzibar.



While the four-day safari was absolutely incredible and we saw all the Big 5 plus more, it was quite expensive. The scuba diving trip was far less expensive but there wasn't so much to see underwater and there were a lot of tourists.

As a solo traveller, a social life was easiest to achieve by staying in hostels, where I made a lot of friends from all over the place (Norway, Rwanda, Kenya, Uganda, South Africa, US, Germany, Czech Republic, etc.). I would end up going to nightclubs or bars with them and we would often have dinners or lunches together. I also got to know a few locals from the Tanzania AI Community but even knew several from the University of Dar es Salaam that had previously been on exchange at KTH.

### **Sustainability**

Eco-friendly travelling in Tanzania is difficult as there is very limited access to public transport. I travelled by flight and purchased the bio-fuel option (only 25% though), and most of my travels within Dar es Salaam were by bajaji or boda (which is at least better than taking the car). I tried to eat local food as much as possible, always looking for local produce first in the grocery stores as well. These products were typically easy to find since they were often the cheapest. In addition, I often walked from place to place and at restaurants near me.

My project is connected to SDGs 4 (education) and 10 (reduced inequality). It aims to improve access to all teachers (whether they work in public or private schools) to genAI as a means to improve the quality of education and AI literacy in the country. Building a tool like Twiga for a non-profit organization in Tanzania also highlights the importance of communities and global collaboration in working toward the SDGs (goal 17).

**Other recommendations and observations**

Tanzania is a great place to conduct a field study in general. My biggest recommendation is to not just accept when someone tells you something should be done in a certain way. I had multiple municipal directors tell me different things regarding the rules for research in schools, and typically the best approach is to be cordial, relaxed, and negotiate to get that signature you need. Also, any stories you may hear about mid-day muggings are very rare and often exaggerated, but perhaps don't whip out a huge wad of cash in a public space.