

# Christopher Dare

Data scientist and engineer interested in ML/NLP R&D and building data-driven products/systems for emerging markets. Passionate about intrapreneurship, AI/cognitive systems and API development. Applied ML major at CMU. Super adapter/learner.

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## EXPERIENCE

### Graduate Student Researcher, Remote — Carnegie Mellon University

OCTOBER 2020 - PRESENT

Working with [Prof. Rita Singh](#) and 3 coursemates from my [deep learning course](#).

We're evaluating the generation of poetry by transformer models, specifically GPT-2. Areas of focus: rhyming, rhythm, perplexity and coreferencing in poems.

Currently, I work on rhyme scoring for evaluation and as a potential discriminator/loss function. See our team progress [here](#). View my contributions [here](#).

Others: Building an autograd deep learning toolkit akin to pytorch. Available on [request](#).

### Rwanda Revenue Authority, Kigali (Rwanda) — Data Scientist (intern)

MAY 2020 - AUGUST 2020

ML for fraud detection in international trade: Prototyped an ML scoring system as a replacement for a rule-based selectivity model for identifying fraudulent consignments.

**Objectives:** Facilitating trade and increasing revenue gains.

**Performance:** 90% precision, 95% recall.

#### My contributions:

- Conducted exploratory data analysis with the team and identified useful features
- Co-wrote functions for ETL and model fitting with pipelines
- Created a cli to train, review and save ML model updates + evaluation reports
- Created an ML REST API to determine the appropriate classification channel for a given declared consignment in compliance to WTO standards. Demonstrated ease of integration to the RRA's existing applications via a streamlit app demo.
- **Other notes**  
Significant packages used: [pandas](#), [sklearn](#), [fastapi](#), [streamlit](#), [poetry](#), [joblib](#), [typer](#), rra-data (custom database package)  
TDD with devops on Gitlab, software architecting with UML & C4

### Clearspace Labs, Accra (Ghana) — Product Manager

MAY 2019 - JULY 2019

Managed development of conversational medical record system for [Serenity Health](#). Co-led the team with a hands-on engineering approach. The outcome allowed doctors and nurses to record and review patient visits 50% faster than before.

- Prioritized feature development, improved product roadmap, and introduced clarity in implementation via storyboarding.
- Prototyped user interfaces for EMR and patient apps.

## SKILLS

Data science

API development

Speaking & presentation

Product design

Software architecture

Customer & market discovery

User empathy

## TECH TOOLKIT

### Data science

Numpy, pandas, scikit-learn, joblib, typer, pytorch, tensorflow, spacy, nltk...

### Web and API development

Djangorest, FastAPI, postman

### Programming

Python (expert)  
SQL (average)

HTML, CSS, JS (familiar)  
Java, C++ (familiar)

### Prototyping

Google slides (expert)  
Adobe XD (familiar)

### Project, Devops, Cloud

Git: Gitlab, Github  
Digital Ocean

## **Inflexion Capital**, Accra (Ghana) — *Technology Analyst*

JULY 2017 - MAY 2019

Worked on projects in partnership with [IC Asset Managers](#), [IC Securities](#) and [MTN Ghana](#).

- Identified opportunities for automation and architected software to replace human efforts in areas such as financial statement imports, trade settlements, and quarterly reporting to fiduciaries. Saved the firm \$24K+ in hiring costs.
- Co-wrote a corporate investment portal: Abstracts operational procedures from fund managers.
- Designed and managed development of a [trustee portal](#) to provide secure information search and retrieval for fund trustees.
- Devised solution architecture for a retail investment fund product with management. Projected to allow the firm to manage over \$100mn more in assets.
- Performed user testing on software updates during MTN Ghana IPO share offer.
- Analyzed and automated processing and synchronization of text and image data from 90,000+ IPO subscribers.
- Wrote technical, policy documentation for the IPO underwriter (IC Securities).
- Ran and completed financial reconciliations for all IPO USSD subscriptions.
- Delivered a presentation to a corporate client on 2017 Q3 fund performance and 2017 Q4 outlook.

## **EDUCATION**

### **Carnegie Mellon University Africa**, Rwanda — *Ms. Information Technology (CIT scholar, applied machine learning major)*

JULY 2019 - JUNE 2021

### **Valley View University**, Ghana — *Bsc. Computer Science*

SEPTEMBER 2013 - JULY 2017

President and Senator, Computing Science Students' Association (2016-2017)

Admitted to the [SEO Africa](#) internship program at Inflexion Capital

## **PUBLIC PROJECTS**

[Firelord](#) — Code tutorial I made to teach how to create a decoupled machine learning application using modern python, FastAPI and streamlit (WIP)

[Youshen](#) — Evaluating and improving poetry generation by GPT-2

[Serenity](#) — Easy access to world-class healthcare from anywhere

[Novi](#) — Messaging for family and people of close relation (alpha version)

[Oremi](#) — Knowledge driven conversational commerce (ongoing CMU practicum)

## **COURSES**

- Strategic use of digital information in enterprises
- Privacy, policy, law and technology
- Data structures and algorithms
- Artificial neural networks
- Deep learning
- Speech signal processing
- Natural language processing
- Research methods
- Intro to HCI

## **VOLUNTEER WORK**

- Moderator, [fireside chat with H.E Paul Kagame](#), President of Rwanda
- Facilitator, rural outreaches to support 200+ children in Ghana
- Analyst & API developer, [Novi](#)

## **AWARDS AND PROGRAMS**

- Best behaved student (Valley View University)
- Secure and Private AI Scholar, Udacity
- SEO Africa internship program

## **LANGUAGES**

English (Excellent)  
Akan (Fluent)  
French (Beginner)