

Eric Khumalo

Project Title: Democratization of Computer Science Education in Zimbabwe

Spotlight: Technological Access Center

Country/Region: Bulawayo, Zimbabwe

Project Timeline : May 2020 to June 2021(tentative)

Background Statement and Social Problem

A failing economy in Zimbabwe has seen very high rates of unemployment over the last decade. Youth unemployment is one of the most formidable problems the country is facing. The desire to be employed in the formal sector has encouraged a lot of youths to obtain formal education and this has led to a high number of youth enrollment in secondary and tertiary institutions. The last two decades have thus seen an incredible rise in educated youth in Zimbabwe but this great resource still lags in adequate work experience compared to the global thresholds. The Zimbabwean labor market is failing to accommodate all these educated and skilled graduates and thus the country's low industry capacity utilization and very high unemployment rate has contributed to a flourishing informal sector. In the second largest city, Bulawayo, street vendors have occupied and nearly clogged most pavements, bus termini and market places. The city halls are flooded with flyers from budding young entrepreneurs who are offering various services like typing, photocopying, business card and flyer designs e.t.c. Many who do not find work immigrate illegally to South Africa where they face severe discrimination and xenophobia.

Over the past couple of years, through the mentorship programme I started as a teacher in Southern Zimbabwe, I've interacted with many of these talented youths. The last 10 years has also seen an increase in exposure to the internet and technology by many. In 2010, very few Zimbabwean Youths had access to Cellphones and internet connectivity. Yet in 2019, a majority of the tertiary education students have access to a laptop and internet at their schools. I spent 8 months of 2019 interacting with the rising entrepreneurs and developer community in Bulawayo. I was amazed by the ideas they had and their deep drive to implement innovative solutions. However, the growth and scaling of most innovations that required a technical solution was slower due to lack of **strong** foundational knowledge in programming and Computer Science. In 2019 I channeled my experiences as a math and science teacher at Zimbabwean High Schools, a Computer Science student at UC Berkeley and work experiences with Twitter, the Berkeley Lab and the Graduate School of Education to lay a stronger foundation for the engineering community in Bulawayo. I modeled an introductory class on the Structure and Interpretation of Computer Programs, best suited to being taught in a developing country facing a much harsher economy.

The initial enrollment of 200 students faced many economic challenges in transportation, internet and electricity access. I now seek to build on that experience and improve the course offerings and mentorship by opening a Technological Access Center in the city of Bulawayo. The Judith Lee Stronach grant will greatly aid in laying a stronger foundation for the future of technological innovations in Southern Zimbabwe.

Project Plan and Description

This project is about democratizing Computer Science Knowledge in Bulawayo and Zimbabwe. It will serve as an effort to initiate a dialogue about the educated youth's illegal immigration to South Africa and forge a new path that encourages the rise of employment creation in the region. I'll spend the first 3 months from May to early August teaching CS7 to a group of young people who will then sign up on a year long path of solidifying their understanding as members of the Technological Access Center.

CS7 BootCamp

I will target students who finished their A Level studies in November 2019 and are waiting to start University in August 2020. I will teach **300 students** from this pool. They will be enrolled full time in an intense 8-week course of CS 7, an Introduction to Programming and Computer Science. The project will target youth based in Bulawayo who are available to attend classes and office hours in person. Scaling a class also requires scaling help. I'll work with a team of my former students from 2019 to serve as Teaching Assistants and Lab Assistants. I will be training the help to be effective teachers for the numerous High School and community outreach programs that the center will have over the year. The class curriculum will cover UC Berkeley's CS61A class which currently has an enrollment of 2000+ students. It focuses on the Structure and Interpretation of Computer Programs and this style is used to introduce Computer Science at top institutions like UC Berkeley, Stanford, MIT and Harvard. I will also receive advice and support on scaling and grading from UC Berkeley computer science professors and workmates at the Graduate School of Education. CS 7 grading is automated and we will be using the GradeScope platform. Through recommendations from CS faculty, the GradeScope Team gave me free access to their platform which would have cost more than \$900 for a single course

offering. Local educators will also be invited to audit the classes in an effort to create a spark in innovative content delivery.

Technological Access Center

After completion of the course, the students and other university students in the region would be invited to apply for membership at the center. We estimate to have 200 initial members who will be put in teams and paired up with mentors in engineering both in the United States and in Zimbabwe. They will continue taking online based courses using the WiFi and resources that the center will provide. The center will be located in Bulawayo, equipped with very fast WiFi. It will run from 9 AM to 5 PM on weekdays. It will have 1 full time employee for administrative work, who will be running the center on the ground. It will host Computer Science lessons, at selected times of the year. These will be hosted both offline and also online. Non students with sufficient knowledge can also enrol into a mentorship program and they become **members** of the center. The center will offer Free WiFi to its members(secured with user login) and the public(through a timed Access Code that will be issued by administrative assistant). The members will have access to the internet with higher bandwidth. The center will have 8 Computers/Laptops that will be used by the public and members to surf the web for the latest technological news. The center will also be a mini working space for developers/in the city and would allow them to continue taking more resources online. It will be a community space. Members would be required to also give back through sharing what they have learned through completion of voluntary work and partnership. Their year long projects will also include pro bono work to solve challenges faced by local non profit organizations in the region. Those who previously served as teaching assistants will aid in high school and community outreach where they will

create and nature Coding clubs. Having a center would also allow it to host competitions and olympiads for high schools further sparking interests in Computer Science education.

Project Timeline

May to August 2019

- Training of TAs and Lab Assistants and course enrollment for CS7.
- Logistics on opening the center
- Review and selection of applicants to partake in the program and need based transport and internet allowance. Main Program - 8 weeks.
- Instruction begins for all students. **8** hours lecture, **4** hour lab and daily office hours per week.
- **Hackathon** to be held after the completion of the course. Certificate and graduation

July 2019 onwards.

- Center opens, project based learning begins. More course offerings on Data Structures and Algorithms, Web Design and Development, Mathematics, App Development e.t.c

Project Outcome and Learning Impact

My target is at least a 75% completion rate. This will be achieved by channeling more resources to office hours and assistance on project-based work. Upon successful completion of the course and mentorship at the center, students will be comfortable with large scale programming, using technology to solve problems, and agility in adopting new programming languages and technologies. The course will provide an excellent head start for undergraduate or polytechnic studies in computer science/related fields. Last year's cohort has been learning web development and app development under the supervision and mentorship of my team of mentors in Zimbabwe and the United States. We have early decision acceptances into Stanford,

University of Rochester, and Lehigh University, and more enrollment and Zimbabwean institutions. Through surveys and class performance data, I'll conduct a study on the best approaches to teach and introduce computer science education in developing countries, which will be a great resource for replicability of the project in other regions. I'll also continue speaking at radio shows and sharing the vision on local newspapers to tell every young person that they are **able!**

I plan on registering the center as a test taking center with Pearson Vue to lower the costs of taking internationally accredited proficiency exams. While attending the African Diaspora Investment Symposium held in San Jose earlier in Jan 2020, I connected with more potential partners to help with job creation for the youth. One with much relevance to this project is VMWare, who in their mission to help Virtualize Africa, can offer free vouchers to my students who would want to take the Virtualization and Cloud Computing Exam. The total associated cost of being VCP certified in the US/India is an estimate of \$4500. Combining resources offered by the center and my connections with Silicon Valley. The center can offer millions worth of training per 500 successful members of the center. This lays the foundation of creating a highly skilled technological workforce in the region. Further partnerships will be sought to attest to the member's proficiency in numerous technologies. I've been a teacher and I've a deep passion for poverty alleviation through education. After the initial year of running the center, more funding and mentorship will be sought from the MasterCard Foundation and the Echoing Green Fellowship.

| <i>Expenses</i> | <i>Quantity</i> | <i>Unit Price</i> | <i>Final price</i> | <i>Section Total</i> | <i>Notes</i> |
|--|----------------------------|-------------------|--------------------|----------------------|---|
| Travel Expenses | | | | 2100 | |
| Flight | 1 person | 2100 | 2100 | | |
| CS7 Bootcamp | | | | 4930 | |
| Staffing Costs - Teaching Assistants and Lab Assistants | 10 | 100 | 1000 | | I'll use a team of my former students to help me scale the course. |
| Need Based Aid for transportation | Estimated for 200 students | 10 | 2000 | | To reach the marginalized students, I'll offer need based aid to cover transportation costs. |
| Venue for Lecture and Office Hours/ Hiring (Scaled Class) | 1 Lecture Hall | 500 | 500 | | Offered by Bulawayo Public Labrary |
| Certificate issuing | 300 students | 1.5 | 450 | | Quality cercificates of completion that the students would carry and showcase with pride |
| CS7 Swag (Stickers) and some caps/tshirt | Multiple | 300 | 300 | | Stickers for everyone ordered on StickerMule + 'Tshirts for the best students in each project done. |
| Refreshments Coffee/Tea/Snacks | 8 by 1 week cost | 60 | 480 | | Hours of debugging and problem solving are used efficiently with a cup of coffee. |
| Transportation Costs for Eric | 1 Full Tank in 2 weeks | 50 | 200 | | |
| Tech Center Associated Costs | | | | 17408 | |
| Office WiFi (50MBPS) | 1 Office per month | 346.5 | 4158 | | This is the Backbone of the Center. Can support more than 50 connections |
| Salary for Logistic Operator and Administrator for 12 months | 1 person | 400 | 4800 | | Fulltime employee to run the center for day to day operations. 9 AM to 5PM. |
| Rent & Utilities | 12 months | 300 | 3600 | | |
| Laptops/ Computers | 8 | 400 | 3200 | | |
| Projector and Projector Screen | | | 550 | | |
| Whiteboards | 2 | | 100 | | |
| Furnishing (Desks/Chairs/Fan) | --- | --- | 1000 | | To accommodate an avarage of 30 people |
| Stationery and Sundries | 10 months | 56.2 | 562 | | Office |
| GRAND TOTAL | | | | 25000 | |

CS 7

Introduction to Programming and Computer Science

Offered by Eric Khumalo Mentorship Program

Instructor: Eric Khumalo
Mon & Tue 5 PM to 8 PM in Bulawayo Public Library Hall

[Main](#) [Course Info](#) [Course Staff](#) [Schedule](#) [Resources](#) [WhatsApp Group Discussion](#)

Announcements

July 30 Complete LABS to help you solidify the course material.
Homework 2 is out and due on Friday 10 August. It's short and meant to introduce you to course concepts. Read course policies to learn more about submission of your work.
The Ants Project is out and due on Wednesday 8 August

Calendar

| Week | Date | Lecture Topic | Reading | Lab/Discussion | Homework | Project |
|------|-------------|---|---|-----------------------------------|----------------------------|-----------------------------------|
| 1 | Mon June 24 | Functions, Names, Environments (slide01)(note01)(code01.py) | Section 1.1 Section 1.2 Section 1.3 | Lab 1: WorkFlow and Python Basics | | |
| | Tue June 25 | Control, Higher Order Functions (slide01:cont)(note01:cont)(code02.py) | Section 1.5 Section 1.6 | | | |
| 2 | Mon July 1 | Higher Order Functions Cont'd (slide01:cont)(note03)(code03.py) | Section 1.6 | Lab 2: Functions and Control | HW 1 Due Friday 05 July | Proj 1: Hog Due Monday 08 July |
| | Tue July 2 | Recursion (slide04)(note04)(code04.py) | | Lab 3: Higher Order Functions | | |
| 3 | Mon July 8 | Data Abstraction (slide05)(note03)(code05.py) | Section 2.1 Section 2.2 | | | |

www.erickhumalo.com/cs7

Overview: This document highlights the impacts of the work that I did last year with minimal self funding. The Judith Lee grant will allow me to scale and reach greater impacts.

Projects

HOG

This project uses control and higher-order functions together. Reinforces understanding of the first 2 weeks of the course. Students build a simulator for a dice game called Hog. In Hog, two players alternate turns trying to reach 100 points first. Developed at University of California, Berkeley by Professor [John DeNero](#) and the CS61A staff, this project is based on a [2010 SIGCSE Nifty Assignment](#) by Todd Neller.

ANTS vs SOME BEES

Students build a clone of the popular tower defense game, Plants Vs Zombies. This project combines functional and object-oriented programming paradigms, focusing on the entire course. The project involves understanding, extending, and testing a large program with many related parts.

TOPICS COVERED 2 thirds of CS61A material

Functions, Names, Environments | Control, Higher Order Functions | Recursion
Data Abstraction | Sequences, Trees, Mutable data and Values | Objects and Classes
Inheritance | Representation and Growth | Asymptotic Analysis | Linked Lists | Exceptions

Leadership and Character Building

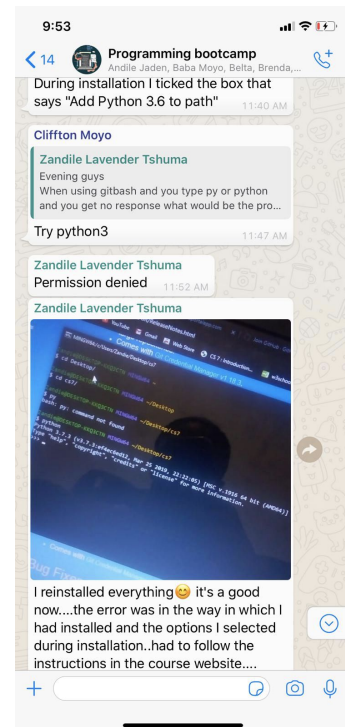
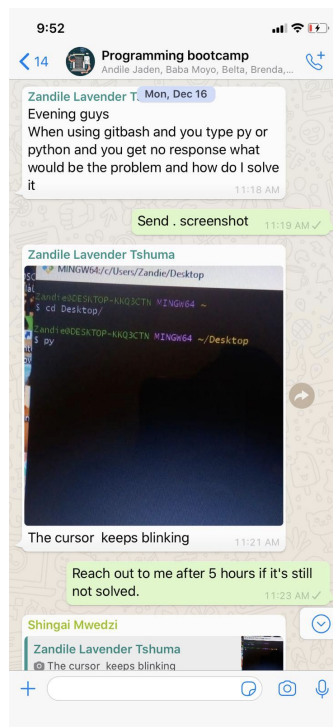
Growth vs Fixed Mindset | Social Innovation | SWOT Analysis e.t.c.

Image 1: Former CS7 student Tafara Makaza sharing his knowledge on App Development with a class of 15 students.

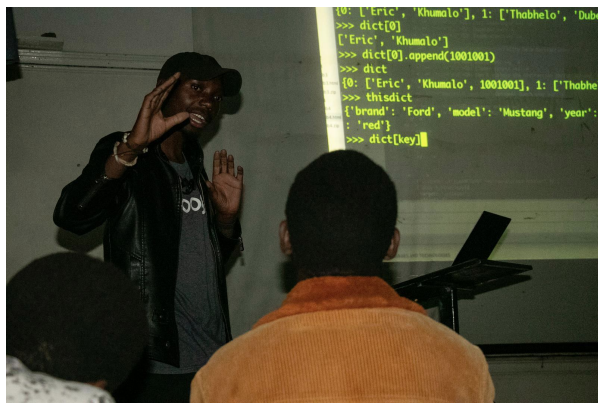
Image 2 & 3: Utilizing the power of whatsApp groups for effective communication and debugging techniques.

Image 4: Team building exercises

Image 5: 7 of my students got accepted and participated in ann all expenses paid hackathon at the Victoria Falls







Reviews from Students

I had many students with different experiences who took the course. Below are some of the feedback they gave on their experiences with me as an instructor and the path the course has set for them

"The course meant the beginning of understanding the fundamentals of programming. As someone who did not have a programming background before the course, I liked the the kind of content that was chosen to accommodate even those without a programming background. It was the kind of content that made it easier for everyone to understand, with challenging exercises to reinforce every concept. I also recall that I learnt the greater part of the course without a computer. Initially, I thought it would be difficult for me to understand programming without a computer but the way the course instructor explained and demonstrated concepts was sufficient for understanding even without a computer. The course also came to me at a time when I was about to apply for university. Through conversations with the course instructor and after a lot of admiration of the course structure, the course inspired me to apply to Stanford University for my

undergraduate studies where I eventually gained early decision admission. Overall, the course was eye opening to first time programmers; convenient to those who had to first go to work and later attend course classes; reinforcing to those who already had experience in programming. I have no regrets that I was a part of it."

~ Proud Mpala, Incoming First Year Student at Stanford University

"I took the CS7 course, introduction to computer science with Eric Khumalo last year between June and August. I did not have any background knowledge on computer science when we first started. If anyone had told me that by the end of the six weeks I would have completed two coding projects and five online homeworks, I would not have believed them. However, learning from Eric made that possible. He exposed us to a whole new world of learning, taking us from the traditional Zimbabwean teaching style. The office hours that he offered during the afternoons and evenings gave me a chance to gain more explanation on classroom concepts. On some days, he would show us videos on real world application of what we were learning, he called them 'inspirational videos'. For a young Zimbabwean girl who had no idea how technology can be manipulated to change the world, this was a wealth of information. In September, I began my university studies at Northwestern University and one of my courses, Engineering Analysis, had coding. I remember proudly sending a screenshot of my first homework program to Eric! Had I not taken that CS7 course, my freshmen quarter studying Engineering Analysis would have been much harder."

~ Nandipha Siluma, First Year Student at Northwestern University

"Eric Khumalo has been nothing but a trendsetter through the CS7 course. Computer programming is one course I never saw myself doing and when Eric came through to teach us how to code, I thought keeping up would be hard. Programming was a whole new world to me but Eric made it fun and enjoyable. His teaching method made learning the course more fun. At times, it would take long for us to understand a concept but he was always patient enough with us. I now see computer programming as enjoyable and for someone who was completely new to this world, I could say I did not expect that at all. I would recommend the course to everyone because it is easy to grasp regardless of having any programming background. Through the CS7 course, I can now confidently look forward to doing my undergraduate degree program at the University of Rochester."

~ Natasha Kabasa, Incoming First year student at University of Rochester

"During the months of April through August Eric Khumalo held a series of workshops on python which I attended he also touched on Javascript and HTML. His course was well structured and advanced at a rapid pace and the assignments solidified everything we learnt. Eric was always

available if we needed help and he continues to give us interesting assignments and reading material. I would highly recommend any future workshops he holds."

-Jordan Sherfield, Home Schooled Ordinary Level Student in Bulawayo

"Right, I'm not sure where to begin or how to begin but OK let me get on with it. The programming course to me personally meant a huge deal and it still does. As someone who's been self teaching himself coding for exactly 2yrs now, the course made me see coding differently, it made me have a different perspective to problem solving, the importance of having a clear understanding of the problem before beginning work on the solution. In addition the course taught me about the importance of having a mathematical approach to problem solving. Despite math being daunting, sometimes, I learnt and got to understand how crucial it is in understanding the fundamental concepts of the building blocks of code. Furthermore, in many ways I would say the course greatly enhanced my thinking and analytical skills. For someone like me who's prided himself for always having every bit of knowledge in arms reach I found myself in your (Eric) class learning something new everyday. I am a much better coder today than I was before the course. I can safely say you're the best teacher I have ever had. However, I must admit it took me a while to feel at ease in your classes (laughs), to be honest I was horrified by your résumé, it's all I ever wanted and you have it I wasn't sure how to carry myself around you, I wasn't even confident much when it came to participating in class. This changed though because you're so down to earth, very calm and collected, you always go out of your way to help the next person. Your teaching is impeccable, you didn't just teach, you taught and at the same time you put your heart in it because it is something you innately and passionately love. Moreover, you aren't just a teacher, you are a mentor and an inspiration to most, including myself. Last but not least, through the course I got to meet other brilliant and passionate minds who are self driven and are all working in many wonderful works. My dream is to be a renowned software engineer, cloud engineer, avid researcher and of course get into Machine Learning and Data Science and eventually fulfill my dream of being a tech entrepreneur. Because of these dreams I would recommend that in the future you also take the time to understand each individual's end goal so you can offer a clear tailor made guidance for the path they've chosen."

~ Andile Jaden Mbele, Third year student at Bulawayo Polytechnic college

"I took part in CS7: Introduction to Programming and Computer Science Boot-camp in June-July 2019. The boot-camp was very helpful for my foundation in computer science as I gained my first coding experience. What made the Boot-camp even more interesting is that we were given the chance to consult individually for more understanding of coding and computer science in general. Consulting was very helpful because I was able to

move at a pace that gave me enough time to fully comprehend the information presented to us. Not only did we do computer science theory, but also got involved in coding projects like The Game of Hog. I would highly recommend this class for anyone interested in programming and computer science because it has created a very strong foundation in understanding programming and skills I need.”

~ Phumuzile Moyo, First year student at Kalamazoo College, Michigan

“I got to know about the CS7 bootcamp from a friend of mine. At first it was very complex but with time and the good teaching strategy our instructor made everything more understandable. The way in which the concepts/basics of Computer Science were delivered was what I found particularly interesting. Unlike the traditional way in which we are taught a programming language, Mr Eric also made an effort to teach us a technique of mastering not only python but also other languages. This has in fact made it easier to grasp other concepts in other languages. We were taught to think as programmers, 'to think like there is no box'. The course not only taught us about programming but also gave us exposure to other technologies that we knew nothing about. I remember in one of our sessions he showed us a 3D printer which most of us had never seen or heard about. He also provided a platform for us to see how other universities are learning. It is my hope that such programs will continue being offered, so that more and more people will be equipped with such skills because they offer a lot of exposure. I am grateful and honored to have been a part of such a great initiative”

~ Lavender Zandile Tshuma, First year student at Midlands State University, Zimbabwe

“Tutor Eric did a great job presenting the Computer programming Introduction in a clear, easily understandable way and making sure that we weren't getting lost. The teaching was effective. The examples were very relevant and interesting. The tutor designed an excellent course that was very useful. Eric was always available for consultation and was excited and willing to help with project questions. I can confidently say that it has been one of the most challenging and rewarding classes that I've taken in 2019. Programming was new to me, but this class gave me a great overview of the language paradigm. The assignments were difficult and rewarding. I would recommend those interested to take this class. It is definitely worth the time investment and it will turn you into a more competent programmer.”

~ Belta Sibanda, Receptionist at Casualty Center 24 hr Clinic, Bulawayo

“Learning programming using Python instead of just learning python language! (Excuse my misuse of punctuation marks as I think all sentences or phrases should end with a semicolon “;”). Lol Cs7 taught me the fundamentals of programming. By fundamentals, I mean the logic thinking and knowledge application when learning a language, and

coding in many languages. As a Bulawayo Poly Student studying Information Technology, one of the prescribed languages to learn this year is/was C++. At the time when everyone at school was attending cpp lectures, I was attending Cs7. Funny thing is, I only started learning C++ about 6 months behind my college mates but today they look to me for code solutions. This was all thanks to the fundamentals I learnt in CS7. The things I learnt there are not restricted to python and C++ only but to programming in general. To tell the truth, I, in fact, we learnt a lot of things that go beyond programming which include the spirit of ubuntu. One day I will write a book about my experience with CS7 detailing my Introduction to the programming world through Cs7."

~ Cliffton Moyo, Third year student at Bulawayo Polytechnic College

ERIC KHUMALO



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EDUCATION

University of California, Berkeley

Aug 2020

Bachelor of Arts, Data Science with Domain Emphasis in Human Behavior and Psychology

- MasterCard Foundation Scholar - \$300,000+ full ride scholarship

Coursework: Social Psychology, Probability for Data Science, Principles & Techniques of Data Science, Discrete Mathematics, Introduction to Database Systems, Artificial Intelligence, Data Structures and Algorithms, Linear Algebra and Differential Equations, Introduction to Economics, Ethics – Behind Data & Values,

Programming Languages: Java | Python | Scala | Spring | React, Redux & Flow | Unix | Ruby | HTML5/CSS3/SCSS | Mustache | Git | JavaScript | AngularJS | Scheme | SQL

Technologies: IntelliJ | VSCode | Jira | TCP/IP | Excel | ReviewBoard | Phabricator | Continuous Integration | TensorFlow | Jupyter Notebook

EXPERIENCE

Software Developer, Graduate School of Education, UC Berkeley, CA

Sep 2019 - Present

- Develops and maintains under Web-Based Inquiry Science Environment (WISE) a learning management system combining technology with education
- Conducts visitations at Albany Middle School to audit classes and get feedback on how the WISE architecture is used
- Works with researchers on building tools they need to evaluate student activity and performance.

Instructor, Introduction to Programming & Computer Science, Bulawayo, Zimbabwe

June-Aug 2019

2 Month Give back Programming Bootcamp Project with 200 students initial enrollment modelled after CS61A course at UC Berkeley

- Taught functional programming, data abstraction and object-oriented programming to working professionals, university, high school and gap year students.
- Used Open – Sourced labs and projects from a UC Berkeley Class to deliver half a semester worth of first-class knowledge while facing third world problems
- 70+ hours a week in course preparation, content delivery, grading and office hours to ensure maximum understanding of course material
- 42 out of 200 students completed the course, with 7 of these qualifying for their first all-expenses paid hackathon offered by the City of Victoria Falls, Zim

Research Computing Support Intern, Berkeley Research Computing, Berkeley, CA

Sep 2018 – Jan 2019

Supports UC Berkeley research with a coordinated set of services across a range of computation and data analysis needs.

- Provides direct support to campus researchers who need help building software for various compute environments
- Conducted evaluation and testing of internal cloud based computing and data solutions with those offered by Microsoft Azure
- Develops projects for dashboards, analytics and visualization tools for the team and user community.

Network Engineering Assistant, – Network Operations and Services, Berkeley, CA

Sep 2018 – Jan 2019

- Installed a wide range of network equipment across campus buildings.
- Kept network infrastructure up to date and secured
- Wrote and executed Python Scripts to configure routers, switches and wireless controllers

Software Engineering Intern, Twitter HQ, San Francisco, CA

May – Aug 2018

- Worked with React and Redux, Scala, JavaScript and other technologies on a **full-stack** implementation of internal anti-spam and anti-abuse tools.
- Scaled the user reporting and execution infrastructure to attain a 56 % increase in efficiency towards spam eradication.

Software Engineering Intern, Twitter HQ, San Francisco, CA

May – Aug 2017

- Build a pipeline to handle spammy reports on the platform for the AntiSpam team in Product Safety
- Improved an internal tool to help agents review and execute actions on spammy accounts
- Organized events as part of the Intern Program board and member of the Blackbirds diversity group.

Software Engineering Intern, Twitter HQ, San Francisco, CA

June – Sept 2016

- Worked with Ruby, Scala, JavaScript and other technologies on a **full-stack** implementation of internal anti-spam and anti-abuse tools. for the Account Security team in Product Safety, Bluebird Engineering Pillar.
- Merged over 30 unique bug fixes and project components into production in the Twitter Agent Tools code base.
- Utilized Ruby, Mustache, and Scala to track user devices and integrate with other Product Safety systems.
- Welcomed and hosted Congressman John Lewis for the MARCH Trilogy Discussion (<https://www.periscope.tv/w/1OyKAbjPMILGb>)

Intern, American Embassy – EducationUSA, Zimbabwe

Aug 2014 – Jan 2016

American-style library and one-stop for those who want to study in the US and attain advice on the application process.

- Compiled scholarship information and developed handouts and educational advising resources.
- Advised and informed students and the public about educational opportunities in the U.S.

Teacher, Tsholotsho, Zimbabwe

May – Aug 2014, Jan-Jun 2015

Mathematics and Science Teacher at rural Tsholotsho High School, John Landa Nkomo High School and Mate Secondary School

- Achieved first 100 % Pass rate for Ordinary Level Physical Science in Tsholotsho District (Tsholotsho High, 2015.)
- Served as Team Manager and Trainer for the District Athletics Team.
- Taught Advanced Level Mathematics and Chemistry.

VOLUNTEER**Instructor, Girls in Robotics, Bulawayo**

June to Aug 2019

- Partnered with a Davis Project Winner to teach Robotics to 20 High School Girls

Eric Khumalo Mentorship Program, San Francisco, CA

June 2016 – Present

- Awards laptops and other prizes to outstanding High School students at Nketa, Mzinyathini and Tsholotsho High Schools in Zimbabwe who exhibit academic excellence, give-back ethos, leadership skills and engagement. Offers mentorship to the talented youth and help them access opportunities.
- Offers Full Need Based Advanced Level Scholarship to mentees who exhibit so much potential including SAT registration fees.

Twitter for Good, San Francisco, CA

Summer 2016, 2017, 2018

- Served meals at Glide Shelter and also assembled 400+ [#BacktoSchool](#) backpacks to give to kids as part of [National Night Out](#)

Mathematics Tutor, Nketa High School, Bulawayo

Feb 2014 – Jun 2015

- Taught Advanced Level Mathematics and served as a consultant for the Math department to improve the pass rate.

AFFILIATIONS

- Founding Member and Director of I. T – [ZimCode](#) | Co-Founder of [ExlAfrica](#) | [Twitter Blackbirds](#) | [LeaderShape Institute](#) | [Berkeley Pre-Engineering Program](#) | Founding member and organizer for the African Young Achievers Awards held annually in the United States. | United States Achievers Program (USAP)

AWARDS AND HONORS

- MasterCard Foundation Scholarship | Accepted into the United States Student Achievers Program – USAP | Finalist in the Zimbabwe Old Mutual Mathematics Olympiad

OTHER SKILLS AND INTERESTS

- Languages: Ndebele/Zulu, Xhosa, Shona and English Speaker | Familiar with SiSwati, Venda, Kalanga, Sotho, KiSwahili
- I write poems and short articles which I publish on my [website](http://erickhumalo.com/poetry) (<http://erickhumalo.com/poetry>)