

Polycarp Okock | Resume

P.O Box 1966 – Kisumu, Kenya

+421(0)919403354 • +254(0)734544704 • polycarp.okock@tatramed.sk

LinkedIn profile • Skype name : podaspo

Education

Slovak University of Technology <i>PhD Applied Mathematics, Efficient Software Solutions for Medical Image Processing and Analysis 2017–2020</i> ImageInLife project.	Slovakia
African Institute for Mathematical Sciences <i>Structured Master in Mathematical Sciences</i> Graduated with Distinction.	Tanzania 2014–2015
Maseno University <i>Bachelor of Science (Applied Statistics, with IT)</i> First Class Honors.	Kenya 2010–2014
Kenya Accountancy and Secretaries National Examination Board (KASNEB) <i>Certified Public Accountant(K)</i> CPA Finalist.	Kenya 2009–2012

Essay Topics

Current Thesis Topic, PhD.....

Title: *Efficient Software Solutions for Medical Image Analysis and Processing*

Supervisor: Dr. Jozef Urban, TatraMed Softwares s.r.o

Description:

The research project is devoted to training in mathematical modelling for image processing (filtering, registration, segmentation, optical flow estimation and tracking), designing numerical methods to solve Partial Differential Equations (Finite Volume methods, Finite Difference methods, etc.) for mathematical models of image processing, developing strategies for High Performance Computing and parallelization of the numerical algorithms.

The objective is to develop new efficient numerical algorithms for the mathematical models of image processing with a broader usable framework and complex software design that effectively uses parallel computing.

The expected accomplishments for the research project are software implementation of new efficient algorithms for Medical Image Analysis with a focus on the following: filtering, atlas-based segmentation, non-rigid registration, optical flow estimation and tracking in branched structures.

Completed in partial requirements for AIMS Masters degree.....

Title: *A Matrix Method of Solving the Schrodinger Equation*

Supervisor: Dr. Timothy Burns, Swansea University

Description: Practical calculations in quantum mechanics typically involve approximate methods, since very few physical systems can be solved exactly. This project investigates one such technique for solving the Schrodinger equation, which combines some of the most elegant aspects of quantum mechanics: matrix formulation, harmonic oscillators, and ladder operators.

Experience

AFRICAN DATA INITIATIVE <i>Software Developer</i>	Maseno, Kenya 2014–2017
---	-----------------------------------

Support the development of a new Statistical Package, which uses R as the back end whereas the front end is developed using VB.net. Supported this development by developing and maintaining a bridge between the front and back ends.

Detailed roles:

- To contribute to the African Data Initiative, particularly through the development of the Instat-R software.
- Submit code regularly to the appropriate GitHub accounts.
- Produce both R and VB.Net code in accordance with the agreed coding standards.

AFRICAN INSTITUTE FOR MATHEMATICAL SCIENCES

Bagamoyo, Tanzania

Teaching Assistant

2015–2016

Providing personal and tailored support to the students and assisting the AIMS Tanzania leadership and the lecturers to deliver a high quality academic programme.

Detailed roles:

- Support the delivery of lecturers' courses.
- Support the learning of students.
- Support supervision of essay projects by monitoring and assisting the students, conferences with the project supervisors and the Deputy Rector.
- Support the smooth running of the academic programme by undertaking the tasks that I was assigned.
- Maintaining and reporting on student records.
- Maintaining and reporting on lecturers' evaluations.
- Supporting the IT manager where necessary when fulfilling the needs of the students.
- Providing support for conferences and workshops.
- Supporting academic outreach towards the development and diffusion or delivery of educational resources for the teaching and learning of Mathematical Sciences in Primary, Secondary and higher education in the Republic of Tanzania.

AFRICAN MATHS INITIATIVES

Kisumu, Kenya

Intern Data Analyst

2014–2014

Developed mobile data collection tools using Open Data Kit, training the farmers on how to use the apps, preparation of quarterly reports on the distribution of rainfall, monitoring incoming live data from the field and carrying out statistical analyses .

Detailed achievements:

- General supervision and control of all the data tools used for data collection for all of the organization's interventions.
- Data entry, merging and analysis for all projects at AMI using R.
- Structuring and designing of databases and data tools used for data capture.
- Testing different statistical software packages and submitting reviews for improvements of these packages.
- Developing mobile data collection applications and training farmers on how to use the apps. This was used to conduct a farmer census.
- Generating graphs for missing climate data for different weather stations around the country using R and advising them on the way forward.

IMPACT RESEARCH AND DEVELOPMENT ORGANIZATION

Kisumu, Kenya

Data Analyst Attache

2013–2013

Data cleaning, validation of variables using SPSS for enhanced analysis. Preparation and in-house cleaning of syntaxes used in extraction, merging and analysis of District health data.

Professional Experience

May 2017 To Date: ICPAK Associate Member and Practicing Accountant - **Registered Associate Member of Institute of Certified Public Accountants of Kenya (ICPAK)**, Associate Membership Number is : ASSOC/2233

Workshops and Conferences Talks

28th June to 30th June 2018: 8th International Workshop on Biomedical Image Registration, WBIR2018 - **WBIR 2018 Workshop on Biomedical Image Registration** held in Leiden, the Netherlands

5th June to 8th June 2018: SIAM IS18 Conference on Imaging Science - **SIAM IS18 Conference on Imaging Science** held in Bologna, Italy

15th May to 17th May 2018: The Microscopy and Image Analysis Platform (MIAP) workshop at the Center for Biological Systems Analysis (ZBSA) - **Applications and Solutions for Big Data in Life Science** held at the Life Imaging Center (LIC), Center for Biological Systems Analysis (ZBSA) at the Albert-Ludwigs University Freiburg, Germany

22nd Jan. to 31st Jan. 2018: ImageInLife workshop Gif sur Yvette - ImageInLife First Early Extended Researchers (ESR) Meeting at NATIONAL CENTER FOR SCIENTIFIC RESEARCH (CNRS) IN GIF-SUR-YVETTE, PARIS ORGANISED BY IMAGEINLIFE EU

23rd Jan. 2017: British Tanzania Society Group Seminar - Maths Focus organised by British Tanzania Society at SOAS, UNIVERSITY OF LONDON

14th Oct. 2016: British Tanzania Society - Teacher Training organised by British Tanzania Society at SOAS, UNIVERSITY OF LONDON

Sep. 2012: Mobile Boot Camp Training on Mobile Web conducted by Akirachix & Mobile Garage at MASENO

Conference/Workshop Presentations

11th - 14th September 2018: Topic: Distance Map Registration CSASC 2018, BRATISLAVA, SLOVAKIA

23rd Jan. 2017: AIMS-Tanzania and its role in Maths Education in Tanzania (Skype) SOAS, UNIVERSITY OF LONDON

12th Jan. 2017: Geometry with a Focused Case Study of Google Search and Maps (Skype) AIMS-SOUTH AFRICA

Jan. 2017: Data Analytics - Application Development (Maseno - African Data Initiative team) MASENO

Miscellaneous.....

Maseno Maths Boot-camp 2014

Mathematical Science Tutor

August 2014

Provided tutorial classes to students at all levels during a one week Maths boot-camp held at Maseno University.

Bagamoyo Maths camp 2016

Mathematical Science Tutor

June 2016

Provided tutorial classes to students at all levels during a one week Maths boot-camp held at Bagamoyo high school.

Awards

2014: Awarded a full scholarship to pursue Master of Mathematical Science at African Institute for Mathematical Sciences.

2014: Structured Masters Scholarship at AIMS-Tanzania

2014: Top Achiever Award – Applied Statistics, with IT

Certificates

2017: Record of Achievement: Enterprise Deep Learning With TensorFlow issued by openSAP.

Computer skills

OS: Windows, Unix/Linux, Android

Basic: Adobe photoshop

Programming Language.....

Intermediate: PHP

Advanced: JAVA (INCLUDING ANDROID APP DEVELOPMENT), PYTHON, R, visual C/visual basic, xaml, C/C++, html/css/javascript, Django (created a library, shopping website).

Others.....

Expert: SPSS, MAPLE, Linux/Unix,SageMath L^AT_EX.

Projects Undertaken

Jan - Apr 2011: Research plan for establishing the effectiveness of strategies to combat HIV/AIDS prevalence at the university level. Conducted at Maseno University

June - July 2016: Organization of the first Tanzanian Maths Camp held at Bagamoyo High school.

Founded/Co-Founded Start-ups

<https://deaspostudios.com/Deaspo> home

Deaspo Studios Inc.

Nov. 2016 - to-date

A software company that builds apps ranging from mobile, desktop and web and provide statistical services to its clients

Languages

Dholuo: Fluent

Native

Kiswahili: Fluent

English: Fluent

Dutch: Basic

Basic words and phrases only

Interests

Volunteering: Volunteered to be a tutor at Maseno, Bagamoyo Maths bootcamp

Sports: Still an active player of basketball and swimming, previously competed in swimming and basketball tournaments upto the national level

Hobbies: I always have a preference for home cooked meals which I personally cook. During my free times I play video games or go hiking.

Referees

Academic Director AIMS Tanzania

Email: mroberts.aims.ac.tz

Prof. Mark Roberts

Lecturer York University

Email: jeff@cse.yorku.ca

Prof. Jeff Edmonds

TatraMed s.r.o

Email: jozef.urban@tatramed.sk

Dr. Jozef Urban

Department of Human Biology, University of Cape Town, South Africa

Email: paul.taylor@uct.ac.za

Dr. Paul Taylor