



Polycarp Omondi Okock

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ABOUT ME

I have worked as a developer for the last 10+ years cumulating to years as a backend/frontend developer or as both. In that time various I have garnered different technologies as experience from the level of junior to a much more advanced level.

In my most recent jobs (projects), I worked as a Research Engineer & Cybersecurity Specialist, working on cutting-edge cybersecurity research and development, building secure applications and zero-trust authentication systems.

My expertise spans web security research, AI/ML applications, and remote browser isolation technologies. When I'm not securing the digital world, you can find me learning, building and deploying Cloud-based solutions, or spending time with my beautiful family.

My strength is in the ability to learn and pick new tech fast and my weaknesses are it gets boring if I do not learn something new. I am always on the lookout for the trending tech and consistently improving myself. I do not need much supervision but I advocate for proper communication especially when working on a team. I am open to a fulltime or part-time positions.

WORK EXPERIENCE

CONSULTING DIRECTOR OF INFORMATION TECHNOLOGY – OTIGO RESEARCH & TECHNOLOGY HUB – 2024 – REMOTE, KENYA

Website: <https://the-orth.com/>

Co-Founder | Leading strategic consulting and product management for healthcare technology solutions, including CarePro platform development and client relationship management.

RESEARCH ENGINEER – EXCALIBUR S.R.O – 01/07/2024 – Current – BRATISLAVA, SLOVAKIA

Website: <https://getexcalibur.com/>

Research engineer for cybersecurity research and development.

- Development of secure applications that are protected from cyber security attacks
- Research of web application firewalls, web security and implementing protocols to protect applications from such attacks.
- Research of use of Artificial Intelligence to build Generative AI applications apps that deliver highly accurate responses, rich context, and deep explainability.
- Building remote browser isolation (RBI) to protect users, resources from internet threats

IT CONSULTANT – MANTRO S.R.O – 01/02/2023 – 31/12/2023 – TRNAVA, SLOVAKIA

Website: <https://www.mantro.net/en>

Lead Frontend Developer

- Implement frontend using Nx.dev ReactJs v18, TypeScript, JavaScript, Redux/RTK Query, HTML5.
- Writing custom React Hooks and inbuilt React use hooks.



- End to end tests with Cypress testing tool.
- Style using Tailwind CSS, JSX, SCSS, Styled Components.
- Participate in daily standups, planning.
- Collaboration with the team UX designer on design decisions using Adobe XD.
- Version control using GIT, CircleCI for building and deployment.
- Chrome dev tools for React, Angular, NgRx and Redux for debugging.
- Peer code reviews of teams work.
- Assisting the backend team with .NET for API development.
- Migrating React based applications to Angular base web applications.
- Dockerization with Docker, terraform and kubernetes.
- Explore development of mini projects using Angular v15 (with RxJs, NgRx), Remix.js, Svelte, Node.js and other JavaScript based libs

RESEACH AND DEVELOPMENT MEDICAL IMAGING – TATRAMED SOFTWARE S.R.O – 13/11/2017 – 31/01/2023 –
BRATISLAVA, SLOVAKIA

Website: <https://tatramed.sk/en/>

Responsibilities:

- Implement frontend in ReactJs v17, TypeScript, JavaScript, HTML5.
- Writing custom React Hooks and inbuilt React use hooks.
- Write Jest unit test.
- Style UI using CSS, JSS, Styled Components, Material UI.
- Material 3 design guideline and UI for UX.
- Build and deploy testing servers on Jenkins.
- Manage deploy machines running CentOS7 , Rocky Linux 9 and MacOS.
- Participate in daily standups, grooming, planning, retrospective meetings (work in scrum and agile development team).
- Collaboration with the team Product owner on design decisions using SketchUp, Figma to create a smooth user experience.
- Version control using GIT and TFS.
- Chrome dev tools for React for debugging.
- Peer code reviews of teams work.
- Implementation of backend in C++, C#, .NET, using Linux MsBuild.
- Creation of scripts to automate and make files build, test, and install packages on the CentOS and Rocky Linux platforms.
- Migration of PHP based script files to React components.

Research and Development:

- Acting as a co-supervisor to Ph.D. student.
- Write C++ algorithms to process and analyze medical images i.e., liver and bladder from CT.
- Built and maintains a C++ image based shared library, hosted in GitHub.
- Attend and present at conferences for medical imaging and mathematical modelling using partial differential equations.

SOLUTIONS DEVELOPER – DEASPO STUDIOS INC. – 01/01/2016 – 31/12/2019 – NAIROBI, KENYA

Co-founded the company with others and specialized in developing mobile, desktop and web applications. Trained new employees and organized training workshop for small and medium sized business (SMEs).

- Developed fullstack applications using Django Python framework
- Database managemanagement with SQLite
- JavaScript, CSS, HTML, Bootstrap for web applications and training
- Android app devedevelopment using JavaPython, R, SPSS for data cleaning, analysis and writing reports

APPLICATION DEVELOPER – AFRICAN DATA INITIATIVE – 01/08/2014 – 31/12/2017 – MASENO, DAR ES SALAAM, KENYA

Website: <https://www.africanmathsinitiative.net/>

Developement of R-Instat, an open-source statistical package.



Support the development of a new open-source 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.

TEACHING ASSISTANT IN UNIVERSITIES – AFRICAN INSTITUTE FOR MATHEMATICAL SCIENCES – 01/08/2015 – 31/08/2016 – DAR ES SALAAM, TANZANIA

Website: <https://aims.ac.za/>

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

● EDUCATION AND TRAINING

01/09/2017 – 31/08/2021 Bratislava, Slovakia

PHD. APPLIED MATHEMATICS Slovak University of Technology

Website <https://www.stuba.sk/> | **Field of study** Natural sciences, mathematics and statistics |

Thesis Efficient Software Solutions for Medical Image Processing and Analysis

01/08/2014 – 01/08/2015 Dar Es Salaam, Tanzania

STRUCTURED MASTER IN MATHEMATICAL SCIENCES African Institute for Mathematical Sciences (AIMS)

Website <https://aims.ac.za/> | **Field of study** Natural sciences, mathematics and statistics | **Final grade** Distinction |

Thesis A Matrix Method for Solving the Schrodinger Equation

01/08/2010 – 01/08/2014 Maseno, Kenya

BACHELOR OF SCIENCE APPLIED STATISTICS WITH IT Maseno University

Website <https://maseno.ac.ke/> | **Field of study** Natural sciences, mathematics and statistics | **Final grade** First Class Honors

01/01/2009 – 31/12/2012 Nairobi, Kenya

CERTIFIED PUBLIC ACCOUNT (K) Kenya Accountancy and Secretaries National Examination Board (KASNEB)

Website <https://www.kasneb.or.ke/>

● PROJECTS

01/11/2024 – CURRENT

Sleepy Tabs Guardian Chrome Extension

Sleepy Tabs Guardian keeps Chrome lean without losing your place. Automatically pause idle tabs, act on runaway memory, and review every decision in a searchable dashboard. In-page reminders give you the final say—snooze, ignore, sleep, or reload—while an optional native helper deepens telemetry.

Features

- Auto-sleep inactive tabs after a configurable timeout (default 5 minutes) with per-tab override switches.
- Auto-manage high-memory tabs with per-state actions (default total heap threshold 100 MB, reminder for active tabs, sleep for inactive) using CDP lifecycle commands.
- IndexedDB-powered telemetry log with dashboard highlighting critical pages and recent actions.
- Consent workflow plus in-page reminders with countdowns that auto-accept actions if the user is away.
- Options page for thresholds, reminder timers, and automation toggles.
- Hybrid telemetry stack.

Link <https://chromewebstore.google.com/detail/bfgeeiahcekoefnjbdcfdgbhehgneb>

01/08/2024 – CURRENT

Radio Diaspora - Android App for Kenyans Living Abroad

About

An open-source native Android application for streaming Kenyan radio stations. This app scrapes station data from the radio.or.ke website and provides a clean, native interface for listening, background playback, and casting.



Features

- **Native Streaming:** Listen to dozens of Kenyan radio stations directly in the app without a web browser.
- **Google Cast:** Cast audio to any Google Cast-enabled device on your network (e.g., Chromecast, Google Home/ Nest speakers).
- **Background Playback:** Keep listening to the radio while using other apps or when your screen is off, with a full-featured media notification.
- **Clean UI:** A simple, modern grid layout built with Google's Material Design guidelines.
- **Rotation Resilient:** Playback continues uninterrupted when you rotate your screen.
- **Seamless Transfers:** Automatically transfer playback between your phone and a cast device when you connect or disconnect.

Link https://github.com/deaspo/radio_stations_kenya_app

CURRENT

CarePro: Healthcare Home Care Management Platform

Nx-powered monorepo delivering ORTH House Manager for Kenya: Next.js 14 App Router front-office, verified talent marketplace, and admin analytics backed by Prisma/PostgreSQL. Ships with Fastify verification microservice using BullMQ + Redis, DeepFace biometrics, Google Cloud Vision OCR, Stripe billing, SendGrid & Africa's Talking messaging, Cloudinary media workflows, and Docker/CapRover deployment playbooks.

Link <https://carepro.polycarpokock.com/>

2024 – CURRENT

Verification Service for Kenyan Documents and Biometric Face Recognition

Document Verification Microservice

Enterprise-grade Node.js microservice for verifying Kenyan government documents (National IDs, Passports, KRA certificates, etc). Features asynchronous job processing with Redis/BullMQ, real OCR integration with Google Cloud Vision API, automated field extraction with AI, webhook notifications for verification results, and comprehensive RESTful API. Built with Fastify for high performance and scalability.

DeepFace Service: Biometric Face Recognition

Self-hosted Python microservice for face recognition and biometric verification using DeepFace. Provides REST API for face matching, selfie verification, and identity confirmation with GPU/CPU flexibility. Integrated with verification service for document-to-selfie matching during identity verification workflows. Built with FastAPI and optimized for production deployment with comprehensive logging and error handling.

Link <https://carepro.polycarpokock.com/>

01/01/2018 – CURRENT

Image software library for 3D image processing

Image software library for 3D image processing, hosted at <https://zenodo.org/record/3416164> and <https://github.com/ImageInLib/ImageInLib/wiki>

Link <https://zenodo.org/record/3416164>

10/2023 – CURRENT

Kavino Wine & Coffee Bar Website

Modern, responsive business website for a premium wine bar and coffee shop in Trnava, Slovakia. Features mobile-first design, smooth animations, interactive elements with sticky navigation, and integrated contact forms. Built with custom PHP backend, MySQL database, and modern frontend technologies.

Link <https://kavino.sk>

01/10/2019 – 30/11/2019

High performance computing (HPC) and multi-GPU based Deep learning segmentation



Digital Biomedical Imaging Systems (DITABIS) AG - ACQUIFER : High performance computing (HPC) and multi-GPU based Deep learning segmentation (secondment), a collaboration between TatraMed software s.r.o and ACQUIFER (division of DITABIS).

01/05/2018 – 31/05/2018

Deep Learning Network for CTA Bone segmentation

Manchester Metropolitan University (MMU) - Mini-Project: Deep Learning Network for CTA Bone segmentation (secondment), a collaboration between TatraMed software s.r.o and the research team at Manchester Metropolitan university (MMU).

01/06/2016 – 31/07/2016

Organization of the first Tanzanian Maths Camp held at Bagamoyo High school.

01/01/2011 – 30/04/2011

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

PUBLICATIONS

2021

Atlas-based 3D medical image segmentation algorithm

P.O Okock, J Urban, K Mikula - Thesis article

Link https://www.academia.edu/117033673/Atlas_Based_Image_Segmentation

2021

Improvement and handling of segmentation model with an inflation term

P.O Okock, J Urban, K Mikula - Tatra Mountains Mathematical Publications

Link <https://www.mat.savba.sk/ojs/index.php/TATRA/article/view/752>

2020

Efficient 3D shape registration by using distance maps and stochastic gradient descent method

P.O Okock, J Urban, K Mikula - Tatra Mountains Mathematical Publications 75 (1), 81-102

Link https://www.sav.sk/journals/uploads/0402143906_639-10-2478-TMMP-2020-0006.pdf

2019

ImageInLib Library

Open source 3D software processing library

Okock, P.O., Urbán, J., & Uba, M.O. Zenodo

Link <https://zenodo.org/records/3416164>

2018

Distance Map Registration

Okock, P O., Uba, M O., Urban, J., Mikula, K., Kriva, Z. CSASC 2018
Bratislava: Union of Slovak mathematicians and physicists, 2018, p. 125. ISBN 978-80-89829-05-7

Okock, P O., Uba, M O., Urban, J., Mikula, K., Kriva, Z. CSASC 2018, p. 125. ISBN 978-80-89829-05-7

2015

A Matrix Method of Solving the Schrodinger Equation



Okock, P.O., Burns, T. AIMS. August 2015. DOI: 10.13140/RG.2.2.10729.83042

Link https://www.researchgate.net/publication/322593570_A_Matrix_Method_of_Solving_the_Schrodinger_Equation

● SOCIAL AND POLITICAL ACTIVITIES

06/2016 – 06/2016 Bagamoyo, Tanzania

Bagamoyo Maths Boot-camp

Math science tutor, providing tutorial classes to students at all levels during a one week Maths boot-camp held at Bagamoyo high school.

01/08/2014 – 31/08/2014 Maseno, Kenya

Maseno Maths Boot-camp

Mathematical Science Tutor

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

● CONFERENCES AND SEMINARS

01/08/2021 – 31/08/2021 Bratislava

Advances in Architectural, Civil and Environmental Engineering 2021 (AACEE 2021)

Presentation topic: Atlas-based 3D Medical Image Segmentation

01/10/2020 – 30/10/2020 Podbanske, Slovakia

Algoritmy 2020

Presentation topic: Efficient 3D shape registration by using distance maps and stochastic gradient descent method Write here the description...

Link <https://www.math.sk/alg2020/>

01/06/2019 – 31/07/2019 Heidelberg, Germany

European Research Night 2019

Presentation topic: How does life begin?

EMBL campus, Heidelberg, Germany.

Link <https://www.embl.org/news/events/european-researchers-night-2019/>

25/06/2019 – 27/06/2019 Zilina, Slovakia

Information and Digital Technology 2019

Presentation topic: Deep learning for bones segmentation in CT-A data

Link <https://idt.fri.uniza.sk/idt2019/index.php?clanok=papers>

01/10/2019 – 30/10/2019 Heidelberg, Germany

CytoData 2019

CytoData Symposium and Hackathon from Oct 28-30, 2019 at the DKFZ, Heidelberg, Germany

Link <https://www.cytodata.org/symposia/2019/>

05/10/2018 – 12/10/2018 Seignosse, France

MIFOBIO 2018

Presentation topic: Non-rigid and Deformable registration for medical and biological data

Link <https://imabio-cnrs.fr/introduction-to-mifobio/>



01/08/2018 – 31/08/2018 Bratislava, Slovakia

Joint Meeting of the Czech, Slovenian, Austrian, Slovak and Catalan Mathematical Societies (CSASC 2018)

Presentation topic: Distance Map Registration

Link <https://www.math.sk/csasc2018/>

28/06/2018 – 29/06/2018 Leiden, Netherlands

Workshop on Biomedical Image Registration, WBIR 2018

Link <https://www.dtls.nl/events/wbir2018-8th-international-workshop-on-biomedical-image-registration/>

05/06/2018 – 08/08/2018 Bologna, Italy

SIAM IS18 Conference on Imaging Science

Link <https://www.siam-is18.dm.unibo.it/index.html>

27/09/2018 – 28/09/2018 Freiburg, Germany

The Microscopy and Image Analysis Platform (MIAP) workshop at the Center for Biological Systems Analysis (ZBSA), MIAP 2018

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

Link [https://gepris.dfg.de/gepris/projekt/284179733?](https://gepris.dfg.de/gepris/projekt/284179733?beginOfFunding=&bewilligungsStatus=&bundesland=DEU%23&einrichtungsart=-1&fachgebiet=%23&findButton=historyCall&ggsHunder)

[beginOfFunding=&bewilligungsStatus=&bundesland=DEU%23&einrichtungsart=-1&fachgebiet=%23&findButton=historyCall&ggsHunder](https://gepris.dfg.de/gepris/projekt/284179733?beginOfFunding=&bewilligungsStatus=&bundesland=DEU%23&einrichtungsart=-1&fachgebiet=%23&findButton=historyCall&ggsHunder)

23/01/2017 – 23/01/2017 Remotely, Nairobi

SOAS University of London 2017

Presentation topic: AIMS Tanzania and its role in maths education in Tanzania

Link <https://www.soas.ac.uk/>

HONOURS AND AWARDS

01/08/2015

Distinction – Structured Masters in Mathematical Sciences – African Institute for Mathematical Sciences

01/08/2014

First Class Honors – Bachelor of Science (Applied Statistics, with IT) – Maseno University

01/12/2017

Record of Achievement: Enterprise Deep Learning With TensorFlow issued by openSAP – OpenSAP

LANGUAGE SKILLS

Mother tongue(s): **DHOLUO** | **SWAHILI** | **ENGLISH**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
SLOVAK	A2	A2	A2	A2	A2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user



RECOMMENDATIONS

Jozef Urbán, PhD supervisor, Colleague, Mentor, Co-author

PhD university supervisor, colleague at TatraMed Software s.r.o, partner in various research and projects

Email jozo.urban@gmail.com

Karol Mikula Supervisor, mentor

PhD University supervisor

Email karol.mikula@gmail.com

Marek Sigeti Colleague, mentor

Colleague and mentor at TatraMed Software s.r.o

Email marek.sigeti@tatramed.sk

Jeff Edmonds Supervisor, lecturer, mentor

Visiting professor from the Theory Group, Dept. EE and Computer Science, York University, Toronto Ontario Canada.
Acted as my lecturer during master studies and also as a mentor

Email jeff@cse.yorku.ca

RESEARCH GRANTS

01/01/2022 – CURRENT

Training European Experts in Inflammation: from the molecular players to animal models and the bedside

INFLANET EU - This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 955576.

Link <https://cordis.europa.eu/project/id/955576>

01/01/2017 – 31/12/2021

Training European Experts in Multilevel Bioimaging, Analysis and Modelling of Vertebrate Development and Disease

ImageInLife EU - This project received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 721537.

Link <https://cordis.europa.eu/project/id/721537>