Dr Kevin NGUETCHOUANG NGONGANG

PHD ENS LYON

Email: kevinnguetchouang@gmail.com | (33) 7 58 78 75 30 linkedin github website
Birthday: 08/09/1998

FIELDS OF INTEREST

- Software Engineering
- Security
- Operating System and Virtualisation
- Machine Learning

EDUCATION

Ph.D Student
ENS Lyon | December 2020 - April 2024
Supervisors: Alain TCHANA & Pierre OLIVIER

- Worked on the qemu stack, especially the qcow2 block format to optimize the use of resources when the size of storage increases (optimize performances at scaling)
- Proposed a new design that will scale with the size of the storage to be useful for cloud providers: the case of the Ceph open-source system

National Advanced School of Engineering - Yaounde
Student Engineer | September 2017 - October 2020

- Entered the school through *the competitive entrance examination* for the Bachelor's level which has an acceptance rate of 5% in the whole country for 300 brave participants.
- Currently, had a GPA of 3.2/4 cumulated during these 2 last years and ranked at the top 1% of my promotion.
- Participated at Indaba X Cameroon

University Institute of Technology
Student in IT | Sept 2014 - Sept 2017

- Completed in July 2017 with Bachelor in Software Engineering and in Network and Internet Design
- Dschang University best student award with a GPA of 3.7/4, major of my promotion
- Contributed to The PB-HEV project enrollment as Mobile Engineer assistant to help to build the Android application for this purpose - this project aimed at distributing computers offered by the president of the republic across all the country
- Attended a WorkShop on IOT by programming in arduino

WORK EXPERIENCE

Research Engineer
Grenoble INP - LIG | June - November 2024

- Create utilities and tools to reduce WaLT platform consumption via Wake-On-LAN. The WALT platform seeks to reduce power consumption by turning off nodes that have not been used for at least two hours. WaLT is a platform to create easy private testbeds to ensure experimental reproducibility. See more on *https://walt-project.liglab.fr/*
- Extend the platform by VPN. Work has been undertaken to extend a WALT platform over large distances, and thus be able to carry out realistic experiments with long-range wireless protocols, such as the LoRa protocol.

Security Research Assistant
The University of Manchester | February - July 2023

- Developed a model to detect syscalls in binaries using static analysis and symbolic execution
- Modeled a phase detection mechanism to retrieve allowed syscalls chain in binaries specifically in the case of containers.

Research Intern
LIP Lyon - Avalon | April - October 2020

- Developed a module for intercepting data flow between the cache of openwhisk invokers and remote storage in order to optimize request. This helps to have a cost-effective system while using serverless providers' resources.
- Developed a model for Intelligent resource allocations to FaaS functions
- Worked on docker registry trace player to analyse and understand large object caching in IBM in order to apply it to Openwhisk FaaS system
- Actually, this work was presented at the EuroSys Conference in April 2021 under the name *"OFC: Opportunistic Free Caching system for FaaS platforms"*

WORK EXPERIENCE

IT Engineer
SABC - Society of Brewing in Cameroon | June - September 2019

- Retrieved and structured data using a php Laravel automated script gather from different sources from all the production processes to track this production
- Developed interfaces for automated reporting and tracking using echartsJS in order to improve their Manufacturing Executing System because the old reporting method was static, using Microsoft Excel.
- Designed and developed the hierarchy of the company's infrastructure (subsidiaries, manufacturing workshop, laboratories,…) for dynamic usage - In order to facilitate the monitoring and maintenance of the entire infrastructure.

Mobile & Web Developer
Music platform VRJMusic | June - August 2018

- Develop cross-platform mobile apps (Android, IOS, Windows Phone) using React Native to increase high availability and promotion of music in the whole country
- Modeling a recommender system based on Collaborative filtering and music preferences

Mobile & IT Engineer
Acerfi Cameroon - Training Center & IT provider solutions
June - August 2016

- Developed cross-platform apps for mobile using Ionic in order to improve the Acerfi training center management performance. Before our system, 2 trainers was doing extra Backgroundhours to fill in the students' final marks. Now, with our solution, final marks are generated so that extra hours doesn't exist at all; and also, students can follow their marks anywhere using internet.
- Attended at training as an IT trainer for beginners on Software Development and Operating systems basics (C/C++/GNU bash)

TEACHING

L3 Assistant Teacher
InfoMaths department at ENS Lyon
September 2021 - January 2022

- In charge of practical works, TDs sheet in the course "Circuits logiques et réseaux informatiques"

GRANTS

ACM SIGMETRICS grants 2021

PERSONAL PROJECTS

- *Eshop:* Desktop application for a shop, made with Java to manage the catalog of products, the orders and the compatibility of all the shop. *Already in production*

- *DMPTCP:* Distributed version of the Multipath TCP protocol using Linux Networking programming (C language and Linuk Kernel programming also used).

- *atbswp:* A multiplatform open clone of tinytask. Made in python, it allows the user to record his mouse and keyboard actions and reproduce them as many times he wants. *First Release already exist.*

PUBLICATIONS

Middleware 2024 - International Conference
SysFinder: Binary-Level Static System Call Identification
Gaspard Thévenon, *Kevin Nguetchouang*, Kahina Lazri, Pierre Olivier, Alain Tchana

IEEE TCC 2024 - Journal
Nami: Navigating Between Replicas in Distributed Storage Systems
(under final review)
Kevin Nguetchouang, Pierre Olivier, Alain Tchana

IEEE TCC 2024 - Journal
SVD: A Scalable Virtual machine Disk Format
Kevin Nguetchouang, Stella Bitchebe, Theophile Dubuc, Mar Callau-Zori, Christophe Hubert, Pierre Olivier, Alain Tchana

Compass 2022 - National Conference
sQemu: vers un stockage virtuel scalable
Kevin Nguetchouang, Stella Bitchebe, Théophile Dubuc, Pierre Olivier, Alain Tchana, Mar Callau-Zori

EuroSys 2021 - International Conference
OFC: Opportunistic Free Caching system for FaaS platforms
Djob Mvondo, Mathieu Bacou, *Kevin Nguetchouang*, Lucien Ngale, Stéphane Pouget, Josiane Kouam, Renaud Lachaize, Jinho Hwang, Tim Wood, Daniel Hagimont, Noël De Palma, Bernabé Batchakui, Alain Tchana

JourneesCloud 2020 - National Conference
FaaSCache: Caching platforms for FaaS applications
Kevin Nguetchouang, Lucien Ngale, Stephane Pouget, Djob Mvondo, Mathieu Bacou, Renaud Lachaize

TALKS

Presentation of my work to Natacha Crooks
during visit to our team at the invitation of Pr Alain Tchana for a talk on her work
July 2021

"Séminaire CVS: Cloud, Virtualisation, Système"
co-organized with Pr Alain Tchana and Pr Jalil Boukhobza teams
June 2021

PROGRAMMING AND LANGUAGE SKILLS

Programming
C, C++, Python, Bash,

Languages
French: Native (C2)
English: Advanced (C1)

SERVICE

Technical Program Committee
BigData'23 reviewer
Eurosys'22 sub-reviewer (main reviewer: Alain Tchana)
OSDI'22 sub-reviewer (main reviewer: Alain Tchana)

Student Mentoring
Carole NOUCTI DJEUMO
M2 Engineering School of Libreville, Gabon
Topic: Transform snapshot chain to SVD-based snapshot chain
Co-supervised with Alain TCHANA
Actually Ph.D student at UCLouvain

PERSONAL INTEREST

Dance, Video Games, Reading
I like dancing (any dance but especially Latino dances), playing video games even if I am bad and reading any science-fiction and futurist novels