
Dr Stella Bitchebe

Ph.D. in Computer Science
(Operating Systems and
Virtualization)
PostDoctoral Researcher

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Nationality: Cameroonian



Education

March 2019 - February 2023	Ph.D. in Computer Science Theme: “Out-of-Hypervisor (OoH): When Nested Virtualization Becomes Practical” Supervisor: Pr. Alain Tchana Laboratory i3S, Côte d’Azur University, Nice, France Laboratory LIP, ENS Lyon, Lyon, France
2015 - 2018	Diploma of Engineering (Master Degree) in Computer Science National Advanced Polytechnic School of Engineering of Yaounde (ENSPY), Cameroon Valedictorian of the graduating promotion
2012 - 2015	Two Year University Degree in Mathematics (DEUG) Faculty of Sciences, University of Yaounde 1, Cameroon
2012 - 2014	Senior Statistics Technician Sub-Regional Institute of Statistics and Applied Economics (ISSEA), Cameroon Vice Valedictorian of the graduating promotion
2011 - 2012	Classes Préparatoires aux Grandes Ecoles ENS Yaounde, Cameroon Valedictorian
2011	Baccalaureate General Leclerc High School (LGL), Yaounde - Cameroon Valedictorian

Publications

➤ International

Efficient Buffer Overflow Detection In Virtualized Clouds Using Intel EPT-based Sub-Page Write Protection Support

Stella Bitchebe, Yves Kone, Pierre Olivier, Jalil Boukhobza, Yérom-David Bromberg, Daniel Hagimont, Alain Tchana

To appear in the Proceedings of the ACM on Measurement and Analysis of Computing Systems, POMACS 2023

To appear in the Proceedings of the International Conference on Measurement and Modeling of Computer Systems SIGMETRICS (A* Rank, Core 2022) [pdf][slides] - TBD

Out of Hypervisor (OoH): When Nested Virtualization Becomes Practical

Stella Bitchebe

Thesis [[pdf](#)][[slides](#)]

Out of Hypervisor (OoH): Efficient Dirty Page Tracking In Userspace Using Hardware Virtualization Features

Stella Bitchebe & Alain Tchana

International Conference for High Performance Computing, Networking, Storage and Analysis, SC22 (A Rank, Core 2021), doi: 10.1109/SC41404.2022.00092 [[pdf](#)][[slides](#)]

Extending Intel PML for Hardware-Assisted Working Set Size Estimation of VMs

Stella Bitchebe, Djob Mvondo, Alain Tchana, Laurent Réveillère, Noel De Palma

Proceedings of the 17th ACM SIGPLAN/SIGOPS International Conference on Virtual Execution Environments, VEE 2021 (A Rank, Core 2020) [[pdf](#)][[slides](#)]

Everything You Should Know About Intel SGX Performance on Virtualized Systems

*Tu Dinh Ngoc, Bao Bui, **Stella Bitchebe**, Alain Tchana, Valerio Schiavoni, Pascal Felber, Daniel Hagimont*

Proceedings of the ACM on Measurement and Analysis of Computing Systems, POMACS 2019
Proceedings of the International Conference on Measurement and Modeling of Computer Systems SIGMETRICS 2019 (A* Rank, Core 2018) [[pdf](#)]

Study of Intel PML Effectiveness

Stella Bitchebe, Alain Tchana, Laurent Réveillère

13th EuroSys Doctoral Workshop, Eurosys 2019 (A Rank) [[pdf](#)]

➤ National

Applying Intel SPP Feature for Buffer Overflows Mitigation

Stella Bitchebe, Yves KONE, Alain Tchana

National Conference in Parallelism, Architecture and System (Compas) 2022

Characterization and Methodology of Buffer Overflow Analysis

*Yves KONE, **Stella Bitchebe** & Alain Tchana*

National Conference in Parallelism, Architecture and System (Compas) 2022

sQemu: Vers un Stockage Virtuel Scalable

*Kevin Nguetchouang, **Stella Bitchebe**, Théophile Dubuc, CALLAU-ZORI Mar, Christophe Hubert, Pierre Olivier, Alain Tchana*

National Conference in Parallelism, Architecture and System (Compas) 2022

Buffer Overflows

*Yves KONE, **Stella Bitchebe** & Alain Tchana*

Journées Cloud 2020 [[pdf](#)]

Everyone Should Benefit from Hardware Assisted Virtualization, Not Only the Hypervisor

*Thévenon Gaspard, **Stella Bitchebe**, Vo Quoc Bao Bui, Alain Tchana*

Journées Cloud 2020 [[pdf](#)]

Hardware Assisted Virtual Machine Page Tracking

Stella Bitchebe, Djob Mvondo, Alain Tchana, Laurent Réveillère, Noel De Palma

National Conference in Parallelism, Architecture and System (Compas) 2019 [[pdf](#)]

Talks

Guest Lecture on Virtualization at McGill University

Montreal (Online), Canada, April 2023

Speaker at the “Scientific Days” seminar at Polytechnic Yaounde

Yaounde, Cameroon, December 2022

Guest researcher at the Sephora Berrebi Scholarship ceremony

Paris, France, June 2022

Invited speaker at IRISA. Presentation of work on OoH (Out of Hypervisor)

Rennes, France, April 2022

Invited speaker at the event “La science un CV_22_Stellamétier de femmes”

ENS Lyon, France, March 2022

Invited speaker at the conference “Can the digital future be more virtuous and sustainable?”

Bibliothèque Municipale de Lyon, Lyon, France, January 2022

Talk on my work and my project against the harassment of young girls in the academic environment to the Minister for the Promotion of Women of Cameroon

Ministry for the Promotion of Women and the Family, Yaounde, Cameroon, December 2021

Talk on my work and my project against the harassment of young girls in the academic environment to the Minister of Youth of Cameroon

Ministry of Youth, Yaounde, Cameroon, December 2021

Presentation of the my research project to the NEC team, during our first fellowship meeting (visio conference)

Lyon, France, July 2021

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

ENS Lyon, France, July 2021

“Séminaire CVS: Cloud, Virtualisation, Système” co-organized with Pr Alain Tchana and Pr Jalil Boukhobza teams

ENSTA-BRETAGNE Brest, France, June 2021

Processing of oral defenses of DS4H tutored projects

Univeristé Côte d’Azur, France, April 2020

Invited speaker the event “La science un métier de femmes”

ENS Lyon, France, March 2020

Hardware Assisted Virtual Machine Page Tracking: Compas 2019

Anglet, France, July 2019

Study Of Intel PML Effectiveness: EuroSys Doctoral Workshop (EuroDW 2019)

Dresden, Germany, March 2019

Hardware Features for Virtualization - GDR and ASF Winter School on Distributed Systems and Network

Village of Pleyne - Sept Laux, France, February 2019

Speech to the student of the Computer Engineering Department about my career: Polytechnic Yaounde (ENSPY)

Yaounde, Cameroon, September 2018

Current Research Projects

Out of Hypervisor (OoH): OoH is a new virtualization research axis advocating the exposure of individually current hypervisor-oriented hardware virtualization features to virtual machines (instead of trying to virtualize full hardware inside VMs). This way VM’s processes can also benefit from those features. We first leveraged OoH to improve checkpoint/restore, garbage collectors, and buffer overflow detection systems. We are now seeking to implement OoH in bare-metal.

Work Experience

Teaching

January - June 2022 (6 months)	L3 Assistant Teacher at ENS Lyon, 32h Ecole Normale Supérieure de Lyon (ENS), Department of Computer Science, Lyon, France Course on Architecture, Systems and Network: conception and implementation of Practical Works, student monitoring.
January - June 2020 (6 months)	L3 Assistant Teacher at ENS Lyon, 32h Ecole Normale Supérieure de Lyon (ENS), Department of Computer Science, Lyon, France Course on Architecture, Systems and Network: conception and implementation of Practical Works, student monitoring.
September – October 2018 (2 months)	L3 Assistant Teacher at Polytechnic Yaounde, 8h National Advanced Polytechnic School of Engineering of Yaounde (ENSPY), Department of Computer Science, Yaounde, Cameroon Course on Virtualization: class and exam preparation, paper correction, student monitoring.

Research & Software Development

September - November 2022 (3 months)	Research Internship at Microsoft Research Cambridge <u>Place:</u> Microsoft Research, Cambridge, United Kingdom <u>Supervisor:</u> David Chisnall <u>Subject:</u> Improving memory safety in WAVM (WebAssembly Virtual Machine) using CHERI capabilities
March - August 2018 (6 months)	Research Internship at IRIT <u>Place:</u> Institut de Recherche en Informatique de Toulouse (IRIT) & Laboratoire de Recherche en Informatique de Bordeaux (LaBRI), France <u>Supervisors:</u> Pr. Alain Tchana & Pr. Laurent Réveillère <u>Subject:</u> Working Set Size estimation Technique Based on Intel PML (Page Modification Logging)
July – August 2017 (2 months)	Internship at AAG <u>Place:</u> Ashdown Advisory Group, Yaounde, Cameroon <u>Subject:</u> Development of a Business Intelligence module for the AAG's ERP (Enterprise Ressource Planning) X-Manager
November – December 2014 (2 months)	Internship at MINESUP <u>Place:</u> Ministry of Higher Education, Yaounde, Cameroon <u>Subject:</u> Realization of the Statistical Yearbook of the Ministry of Higher Education
February – May 2014 (4 months)	Internship at MINESUP <u>Place:</u> Ministry of Higher Education, Yaounde, Cameroon <u>Subject:</u> Design and Implementation of a Unified Database Application for National Universities of Cameroon

Student Mentoring

October - December 2021 (3 months)	Armel Nguetoum M2 Student the Univeristy of Yaounde 1 - Department of Computer Science <u>Topic</u> : Dirty Page Tracking in Boehm GC Using Intel PML Co-supervised with Alain Tchana
March - September 2021 (7 months)	Augusta Mukam M2 Student at National Advanced Polytechnic School of Engineering of Yaounde - Department of Computer Science <u>Topic</u> : Security Policies for the Use of Intel SPP at User-space Level Co-supervised with Alain Tchana Guest Rapporteur in her defense jury
March – August 2020 (6 months)	Yves Kone M2 Student at Sorbonne University of Paris - Department of Distributed Systems and Applications <u>Topic</u> : Applying Intel Sub-Page Permission to Memory Security Co-supervised with Alain Tchana
July – August 2020 (2 months)	Gaspard Thevenon L3 Student at ENS of Lyon - Department of Computer Science <u>Topic</u> : Everyone Should Benefit from Hardware Assisted Virtualization, Not Only the Hypervisor Co-supervised with Alain Tchana

Service to the Scientific Community

Organizer of the 1st Edition of the [Scientific Days Cameroon](#) at the Polytechnic School of Yaounde
National Seminar “Scientific Days Cameroon”, *December 2022*

Member of the Eurosys’23 Shadow PC
European Conference on Computer Systems, October 2022 - March 2023

Main Reviewer at TAAS Journal 2022
ACM Transactions on Autonomous and Adaptive Systems, August 2022

Student Volunteer at “Unikraft Lyon Summer Code” 2022
ENS Lyon, May 2022

Sub-Reviewer at TOCS 2022
Main Reviewer : Alain Tchana

Co-Organizer of the day “La science : un métier de femmes”
ENS Lyon, Mars 2022

Sub-Reviewer at DSN 2022
Main Reviewer : Alain Tchana

“Mid-Career AMA” Session moderator at SOSP Diversity Workshop 2021
Online event, October 2021

Sub-Reviewer at FCGS Journal 2021
Main Reviewer : Alain Tchana

Sub-Reviewer at CRI’21 Conference
Main Reviewer : Alain Tchana

Sub-Reviewer at Compas 2021
Main Reviewer : Alain Tchana

Student Volunteer at “Journées Cloud 2020”: conception of the event [website](#)

ENS Lyon, November 2020

Moodle Platform developer for UNESCO during the 2020's lock down

I was assigned the task of customizing/designing the platform according to the graphic charter of UNESCO.

The aim was to provide a platform where teachers could offer thousands of free courses to students (who were then locked down during the COVID'19 pandemic).

The project was held in collaboration with Professor Alain Tchana, Dr Djob Mvondo and other engineers.

Co-Organizer of the day “La science : un métier de femmes”

ENS Lyon, Mars 2020

Sub-Reviewer at CRI'19 Conference

Main Reviewer : Alain Tchana

Student Volunteer at Compas 2018

IRIT, July 2018

Posters

Efficient Buffer Overflow Detection In Virtualized Clouds Using Intel EPT-based Sub-Page Write Protection Support

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European Conference on Computer Systems, Eurosys 2023 [[pdf](#)]

Applying the Intel SPP feature to buffer overflows mitigation

Yves KONE, Stella Bitchebe, Alain Tchana

National Conference in Parallelism, Architecture and System (Compas) 2022 [[pdf](#)]

Characterization and Methodology of buffer overflows analysis

Yves KONE, Stella Bitchebe & Alain Tchana

National Conference in Parallelism, Architecture and System (Compas) 2022 [[pdf](#)]

Reducing the Carbon Footprint of Data Centers while Improving their Security

Stella Bitchebe

UNESCO-L'Oreal for Women in Science (FWIS) France 2021 [[pdf](#)]

Hardware Assisted Virtual Machine Page Tracking

Stella Bitchebe, Alain Tchana, Laurent Réveillère

National Conference in Parallelism, Architecture and System (Compas) 2019 [[pdf](#)]

Study Of Intel PML Effectiveness

Stella Bitchebe, Alain Tchana, Laurent Réveillère

13th EuroSys Doctoral Workshop, Eurosys 2019 [[pdf](#)]

Technique d'Estimation Du Working Set Basée Sur Le Page Modification Logging (PML)

Stella Bitchebe, Alain Tchana, Laurent Réveillère

National Conference in Parallelism, Architecture and System (Compas) 2018 [[pdf](#)]

Administrative Responsibilities

Member of the laboratory council (Ph.D. Students Representative), LIP laboratory, ENS Lyon

Member of the parity working group at LIP laboratory, ENS Lyon

Participation in the annual organization of the day: “La science : un métier de femmes”, LIP laboratory, ENS Lyon

Organization of doctoral seminars, LIP laboratory, ENS Lyon

Awards and Honors

Laureate of the **2022 “Google Scholarship for Women in Computer Science”** (7k €, 19 Awardees in Europe and Middle East)

[Letter of congratulations](#) from the Minister for the Promotion of Women of Cameroon, for the awards obtained in 2021 during my 3rd PhD year

Received in Ministerial Audience by the Minister for the Promotion of Women of Cameroon (MINPROFF)

Received in Ministerial Audience by the Minister of Youth of Cameroon (MINJEC)

Received in Ministerial Audience by the Minister of Posts and Telecommunications of Cameroon (MINPOSTEL)

Laureate of the **2021 “Microsoft Research PhD Fellowship”** program (15k \$, 10 Awardees in Europe and Middle East)

Laureate of the **2021 “L’Oréal-UNESCO For Women in Science”** program (15k €, 35 Awardees in France)

Winner of the “**Concours Inria d’idées innovantes 2021**” (With my Ph.D. advisor)

Laureate of the **2021 “NEC PhD Research fellowship”** program (49k €, 7 Awardees in Europe and Middle East)

Valedictorian of my graduating promotion at **Polytechnic**, 2018

Finalist of the 2017 “**Huawei Seed For The Future**” program

Major of the Entrance Competition at Polytechnic School of Yaounde, 2015

Best Student of the decade at General Leclerc High School of Yaounde (2012)

Award of **Scientific Excellence** at General Leclerc High School (2011)

Winner of the National Competition (dissertation on the importance of water) organized by the Ministry of Water and Energy in Cameroon (2011)

Conference Grants

OSDI Grants 2021

ACM SIGMETRICS Grants 2021

ASPLOS Grants 2020

SRDS Grants 2019

Eurosys Grants 2019

Programming and Languages Skills

Programming

C, Assembly, C++, Awk

Languages

French: native language (C2), English: Upper Intermediate (B2)

Mobility

Since April 2023

[McGill University](#)

Laboratory DISC, Montreal, Canada

September - November
2022

[Microsoft Research Cambridge](#)

Confidential Computing Team, Cambridge, United Kingdom

November 2028 - February
2023

[ENS Lyon](#)

Laboratory LIP, Team AVALON, Lyon, France

January - October 2019 **Université Côte d'Azur**
Laboratory i3S, Team SCALE, Sophia Antipolis, France

March - August 2018 **Université de Toulouse**
Laboratory IRIT, Team SEPIA, Toulouse, France

Personal Traits

Great adaptability and easy integration (mobility Yaounde - Toulouse - Nice - Lyon)

Great capacity for assimilation

Leadership

Ability to work simultaneously on multiple projects and under pressure

Transversal Training

How to deal with sexist remarks

Caroline De Haas, Campus de Cely, France, October 2021

Learn how to negotiate and build relationships

Aurelien Colson, Campus de Cely, France, October 2021

Personal development and team management

Sabine Henrichfreise & Olivier Basso, Campus de Cely, France, October 2021

Media Training

EuroBusiness Media (Tatiana Haen), Online, France, July 2021

Être lu : comment assurer la circulation de sa publication sur le web?

Université Côte d'Azur, France, October 2020

Personal Interest

I like cooking (specially decorate all the dishes I make and take a photo of them before tasting them)

I also like singing (I use to record myself covering some known songs and post them on social medias)

I also appreciate doing sport and a little bit cycling around

I am having new interest for self-training in nail artist

Leadership and Organizations

Organizer of the 1st edition of the seminar "Scientific Days Cameroon"

President of the association YCOWS (*Young Committed Women Scientists*)

General Secretary of the association CCF (*Chercheurs Camerounais de France*)

Mentor for the third edition of the "[*Olympiades féminines de mathématiques*](#)"

Role Model for the association [*Rêv'ELLES*](#)

Media Coverage

Event	Link
Video Reportage on me by the Cameroonian National Television, 2022	<u>Youtube</u>
Invited for a conference at the Municipal Library of Lyon, 2022	<u>BML</u>

Microsoft Research 2021 Global PhD Fellowship
Recipients

[Youtube](#)

Articles in the regional newspapers of Nice, Lyon
and Villeurbanne related to the award “**Young
Talents France 2021 L’Oreal-UNESCO Dor
Women In Science**”

[CNRS](#)
[Tribune de Lyon](#)
[Le Progrès Lyon](#)
[HER magazine](#)
[ENS Lyon](#)
[Radio Scoop Lyon](#)
[Lyon Entreprises](#)
[ActuNice](#)
[Tout Lyon](#)
[Ville de Villeurbanne \(Facebook\)](#)
[Viva Villeurbanne](#)
[Impact FM Lyon](#)

Guest of the morning news at **BFM Lyon**
October 8, 2021

[BFM - Part 1](#)
[BFM - Part 2](#)

RFI interview during the “Semaine de la
Francophonie Scientifique” organized by the **AUF**
in (Romania)
September 23, 2021

[Facebook Interview](#)
[Live Facebook](#)
[Instagram Interview](#)

“Concours Inria d’Idées Innovantes”, 2021

[ENS Lyon](#)
[LinkedIn](#)

Radio Interview with the **Cameroon National
Television** (CRTV) - For the NEC PhD fellowship
I was awarded, 2021

[LinkedIn](#)
[Youtube](#)

Video Interview with the **Cameroon National
Television** (CRTV) - For the International
Women Day 2021

[LinkedIn](#)
[Youtube](#)
