

**Bih Epse Fofang Janet Shufor**

Address: 40420 Diggins CT, Leesburg 20174, Virginia.

Tel. Mobile: + 1 (571) 343 8890

Email: [bihjane@umd.edu](mailto:bihjane@umd.edu)/[bihjane@yahoo.com](mailto:bihjane@yahoo.com)

**KEY PERSONAL SKILLS**

Track Record of working in technology, Education and development industry.

Skilled in Electronics and Electrical Engineering, Management, Research.

Skilled in Robotics manipulation, electronics and physics modelling and simulations and hardware interaction technologies.

Action researcher always seeking for positive impact.

Budget and Business Planning.

Experience in Managing teams.

Experience across industry, start-ups, academia, NGO, Gender Equity and government.

Experienced people manager and adept at building new teams.

Has work experience in sub-Saharan Africa, Israel, Europe and USA.

Fluent in English and French.

**EDUCATION**

**2018 – present Ongoing PhD, Technology Learning Policy and Leadership, University of Maryland, College Park USA**

- Computational Thinking labs
- Human Computer interactional Labs
- Mathematical Play labs
- Current PhD candidate (5<sup>th</sup> year)
- Dissertation proposal defended titled: How do young learners interact with physical devices to ground their understanding of computational thinking?

**2003-2005 M. ED in Electrical ENGINEERING, University of Douala, Cameroon**

**1995-1998 B. ED in Electrical ENGINEERING, University of Douala, Cameroon**

**CAREER EXPERIENCE**

**National Institute for Standards and Technology**

**Jan 2023 - Present**

Researcher on Artificial Intelligence and user perceptions/ NIST Information Technology laboratory (ITL)/Visualization and Usability Group

**African Institute for Mathematical Science**

**01/2016 -06/2017**

**Consultant**

- Responsible for suggesting and designing cutting edge digital training programs for in service Math teacher professional development.
- Develop and suggest teaching curricula and methods to improve the quality of teaching and learning Mathematics in Cameroon.
- Suggest programs aimed at increasing the pipeline of women and girls in STEM in Cameroon. One of such programs is a STEM challenge for middle school girls called STEM Your School

sponsored by the US Embassy Cameroon and aired on national TV one year.

- Transform teaching and learning of Math into hands on practical learning using 3D printers and robots to program and teach math concepts.
- Identifying and connecting students to STEM career opportunities by linking them to makerspaces and startup communities. <https://aims-cameroon.org/academic-programs/teachers-training/>

### **Tassah Academy**

**2009 - Present**

Founded the Tassah Academy, a leading provider of applied STEM education in Cameroon. To date, the academy has trained over 10,000 students using cutting-edge educational technology activities that prepare K-12 students with appropriate skills for the global economy.

### **NexGen Higher Institute of Technology**

**2015 – Present**

Co-founder of NexGen Higher institute of Technology, an inclusive technology higher institute located in Yaoundé, Cameroon.

- NexGen seeks to address the gap in providing technology skills for next generation workers.
- We collaborate with the Developer's institute in Israel to help individuals who want to have accelerated, intensive and quality training for High Tech employment, and to launch their new careers.
- Build a community of leaders and individuals who have the right mindset to succeed in the thriving high tech and startup ecosystem through intensive coding bootcamps and cutting-edge mentored courses from beginner to job-ready developer through certification programs.

### **Intern Symantec Corporation**

**09/2013-10/2013**

#### **Intern**

- Identifying and developing educational software for offline communities.
- Designed learning planforms that can support raspberry pie and Khan academy lite offline versions to support curricula in under resourced communities.

### **John Paul II University Cameroon.**

**07/2012– 08/2013**

- Point of contact for John Paul II's academic programs.
- Promoted teaching excellence, innovative curricula and focus on the responsible. management of organizations in the global environment.
- Answered typical and complex program questions from faculty, staff.
- Provided functional support and management for the program administration.
- Answered external inquiries, enrollment guidance and basic academic advising.
- Managed web presence and marketing efforts.
- Drafted program materials.
- Managed course evaluations.
- Developed new programming, planning, and executing events for the University.
- Assisted with fellowship and grant opportunities and opened new partnerships with foreign universities.

### **CETIC de Ngoa Ekelle**

**09/2000– 06/2009**

**Head of Department Electronics and Automotive Electronics**

- Taught electronics and mechatronics courses to vocational students in electronics and automotive electronics.
- Advocated to have teachers use more technology in their classrooms; use ICT tools and baseline multimedia techniques to encourage engagement in the teaching/learning exercise.
- Participated in Tech related programs to understand the relevance of technology in education and its overall impact in preparing present day students to take up next generation jobs that may mostly be STEM related.
- Negotiated grants with the Embassy of Israel in Cameroon to design makerspaces and innovation labs in the college.

**Chococam Cameroon**  
**07/1999 - 08/2000**

**Machine operator production unit**

- Responsible for performing various tasks to set up, operate, monitor, troubleshoot and perform preventive maintenance on assigned machines.
- Responsible for inspecting parts to specifications and adjusting, or tool changes as necessary to maintain quality specifications.
- Set up and operated production machine in accordance with established procedures and guidelines.
- Read and interpreted blueprints and diagrams to select, position and secure machinery.
- Adjusted machine settings to complete tasks accurately.

**Cegelec-Cameroon**  
**06/1997 - 06/1998**

**Network Operator**

- Monitored data communications network to ensure that network is available to all system users and resolves data communications problems: Receives telephone call from user with data communications problem, such as failure of data to be transmitted to another location.
- Reviewed procedures users followed to determine if specified steps were taken to maintain active lines.
- Reported user procedures necessary to transmit data.
- Monitored systems via modems and display screen of terminal to mainframe computer to detect error messages that signal malfunction in communications software or hardware.
- Read technical reference manuals for communications hardware and software to learn cause of problem.
- Updated documentation to record new equipment installed, new sites, and changes to computer configuration.
- Inspected communications wires and cables.

**PROFESSIONAL**

**Affiliations:**

- Member of the European Union-African Union Digital Economy Task Force, working to provide recommendations on policies and measures that can support Pan African digital Integration.  
<https://ec.europa.eu/digital-single-market/en/africa#title2>
- Member of Africa Europe Foundation Digital Economy Strategy group  
<https://www.africaeuropefoundation.org/people/>

- Leadership member of the Pan-African Women in Leadership Forum; Director Science Technology Engineering and Mathematics (STEM) Education.  
[www.pawilf.org](http://www.pawilf.org)
- Member of the Human-Computer Interaction Lab University of Maryland.  
<https://hcil.umd.edu/current-students/>
- Active Techwomen Alumni member since November 2013 [www.techwomen.org](http://www.techwomen.org)
- Member of E-nable Community providing 3D printed prosthetic arms to disabled children in Africa. <https://enablingthefuture.org>
- Member of the Cameroon Chapter of Girls in Tech, a global organization focused on the engagement, education and empowerment of influential women in Technology  
<http://Cameroon.girlsintech.org>.
- Program lead for AI Challenge Cameroon, bringing together families to use technology for change. AI family challenge is a hands-on artificial intelligence (AI) educational challenge that brings families and the community together to create, learn about and solve real world problems using AI.
- Leadership council member of Women enhancing Technology Africa.  
<http://www.iie.org/Programs/WeTech>
- Board member, Working to advance STEM education for African Women (WAAW) foundation.  
[www.waawfoundation.org](http://www.waawfoundation.org)
- Mashav Economic Empowerment of Women, under the Israeli Agency for International Development Corporation.
- The STEM Prize award by the Denis and Foretia Foundation. <https://stemprize.org/team/janet-fofang/>
- AFCHIX women in tech role models [http://www.afchix.org/role\\_models/bih-janet-shufor/](http://www.afchix.org/role_models/bih-janet-shufor/)

## **Awards**

- Winner of the 2016 A.Richard Newton Educator ABIE Award winner.  
<https://anitab.org/profiles/abie-award-winners/richard-newton/bih-janet-shufor-fofang/>
- Celebrated on 2019 International Day of Women and girls in science as one of Sub-Saharan Africa's female scientist by the bridgeinternational academics.  
<https://www.bridgeinternationalacademies.com/idwgs2019/>
- Nominated Africa's leading women in Tech 2015 by IT News Africa
- Nominated Innov8tiv's top 100 women visionary leaders to watch in 2016.  
<https://www.borgenmagazine.com/girls-education-in-cameroon/>

## **Publications**

- **New Africa -Europe Digital Economy Partnership – report of the EU-AU Digital Economy Task force.**

June 13, 2019

Author(s): Ursula Owusu-Ekuful, Pierre Guislain, Arancha Gonzalez, Bih Janet Fofang, Maria Manuela Cristina, Princess Abze Djigma, Hisham Ezz Al-Arab, Ambroise Fayolle, Ibrahima Guimba Saidou, Bouthina Guermazi, Mats Granryd, Marek Helm, Christine Leurquin, Anouar Maarouf, Bruno Metting, Gunter Nooke, Jean Philbert Nsengimana, Doreen, Bogdan, Jean Van wetter, Michael Pittelkow, Slim Sikkut, Jon Stever, Marc Vancoppenolle, Lacina Kone.

The European Union African Union Digital Economy Task Force (EU\_AU DETF) was put together to provide a platform for preparing policy documents and partnerships for the private sector, donors, international organizations, financial institutions and civil society-based organizations to bring together African and European shared understanding on how to leverage on cross border integration to take advantage of the fast-evolving digital transformation affecting both continents for the benefit of all citizens.

- **Europe Africa Foundation: Transforming Dialogue into action.**

November 2021

Author(s): Samir Abelkrim, Amrote Abdella, Abdelmalek Alaoui, Gilles Babinet, Janet Bih Fofang, Omar Cisse, Anna Ekeledo, Tunde Fafunwa, Pawel Hansdorfer, Keller Rinaudo, Crystal Rugege, Sihle Tshabalala, Letizia Moratti, Jaakko Kanganiemi, Natasha Kimani, Bruno Mettling.

The Africa Europe strategy group on Digital to which I contributed to crafting policies and discussions around data governance for Africa and Europe. We were able to produce a comparative analysis to highlight the fact that despite the huge potential the digital economy has to be able to drive innovation, competitiveness and growth, Europe and Africa are at different.

levels of maturity in the digital economy space and neither of them are performing to their full potential. We suggested data colonialism due to governance issues could be at the core of why these two continents lag behind in digital transformation.

- **Mutually Supportive Mathematics and Computational Thinking in a Fourth-grade Classroom.**

ISLS 2020

Author(s): Janet Bih Fofang, David Weintrop, Andrew Elby, Margaret Walton, Janet Walkoe.

Robots are introduced into fourth grade mathematics classrooms to understand how computational thinking tools can deepen understanding of other STEM subjects.

- **Building for Robots: An Alternative Approach of Combining Construction and Robotics** Constructionism 2020

Author(s): Janet Fofang, Daniel Pauw, Tamara Clegg, David Weintrop.

Youth in an informal setting design activities and program robots to perform in these designed environments. This study highlights the approach young people take when they construct and design activities for robots versus building the robots themselves.

- **Teacher's Conceptualizations of Computational and Mathematical Thinking** ISLS 2020

Author(s): Margaret Walton, Janet Walkoe, Andrew Elby, Janet Bih Fofang and David Weintrop We try to understand how teachers conceptualize computational thinking from mathematical thinking in a mutually supportive mathematics and computational thinking activity.

- **Implementing a 15-week AI-education program with under-resourced families across 13 global communities. (2019)**

Author(s): Tara Chklovskii, Richard Jungl, Janet Bih Fofang and Pamela Gonzales, Iridescent, California, USA Tassah Academy, Yaounde, Cameroon.

We share the outcomes of introducing artificial intelligence problem solving approaching to under-resourced families who work together as to use AI techniques to identify and solve common problems they face in their communities.

- **Thinking through Representation: Interpreting Representational Fluency Across Contexts in Computational Thinking Enhanced Activities.**

ISLS, 2021

Author(s): Janet Bih Fofang, David Weintrop, Peter Moon, Andrew Elby

In this student we highlight the kinds of representations young learners engage in as they solve problems in computational thinking spaces.

- **Computational Bodies: Grounding Computational Thinking Practices in Embodied Gesture** ISLS, 2021

Author(s): Janet Bih Fofang, David Weintrop, Peter Moon, Caro Williams Pierce This paper highlights the role of embodied gestures in computational thinking practices using robots.

- **Revealing Mathematical Activity in Informal Learning Spaces.**

Author(s): Caro Williams-Pierce, Nihal Katirci, Amber Simpson, Ekta Shokeen, Janet Bih.

- **Unpacking mathematical play within makerspaces using embodied cognition.** *CHI PLAY 2020 - Extended Abstracts of the 2020 Annual Symposium on Computer-Human Interaction in Play*, 365–369. <https://doi.org/10.1145/3383668.3419909>.

Author(s): Shokeen, E., Katirci, N., Bih Fofang, J., Simpson, A., & Williams-Pierce, C. (2020).

- **What Does Computer Science and Maker Education Look Like in 2030?** 2020

ISLS repository Computer Science as a Foundational Literacy for Learning. 0–5.

- **Gusanos y Esferos: Computing with Youth in Rural El Salvador.**

*SIGCSE 2021 - Proceedings of the 52nd ACM Technical Symposium on Computer Science Education.*

Authors: Coenraad, M., Fofang, Bih Janet., & Weintrop, D. (2021).

- Featured in the February 27, 2019 edition of Maryland Today, a brief produced by the office of strategic communication of the University of Maryland. <https://today.umd.edu/articles/roots-stem-46b9ed93-f45d-48e2-80f8-224dad7eca90>.

- **From robots to girl power, getting Cameroon's women into work** <https://www.reuters.com/article/us-africa-education-women/from-robots-to-girl-power-getting-camerouns-women-into-work-idUSKBN1KK00U>

## **Relevant Coursework**

- **Qualitative Research I:** Design and Field work – Examined the theoretical and epistemological moorings of different types of qualitative research. I learned how to select field research methods to problems of professional practice in schools and communities while considering central issues and dilemmas that may arise while engaging in field work.
- **Qualitative Research II:** Analysis and interpretation of data – Learned methods of data analysis, ways of knowing and writing about field research, issues of reflexivity, and the ethical and political decisions involved in crafting text. We read literature and practiced using raw data, exemplars of multiple modes of qualitative data analysis and interpretation.
- **Hands on Machine learning with Weka** – I received hands on experience with the opensource machine learning tool Weka. I covered topics in classification, regression, algorithm types and learned how to get data into a format Weka can process, how to interpret results and document

classification.

- **Introduction to Java script programming** – Learned the fundamentals of Java script programming, basic components of all programming languages including variable types, data structures and control flow. Emphasis was laid on leveraging java script libraries for more advanced functionality.
- **Introduction to interaction Analysis (IA)** – Used raw data in course projects to understand naturally occurring and situated interactions using (IA) research methods by identifying and evaluating repeatable and explainable patterns in conversations using video segments to identify and explain the structures and processes that enable people to make meaning through these interactions.
- **Practical skills in Human computer interaction (HCI) and makerspaces**
- **Inclusive Design** – Learned about design and evaluation of user interfaces for diverse users and use contexts. Building on basic concepts in human computer-interaction (HCI), I learned about design exclusion and barriers to use of digital tools and methods by which these can be overcome.
- **Facilitating Youth Learning in Formal and Informal Environments** - understanding information literacy in formal and informal learning spaces.

### **Research Interests**

My research interests are around designing digital tools and activities in the areas of engineering and Interactive Computing (IC). I do research work in redefining the human experience of computing and robotics. My work is generally focused on supporting people understand the importance and power of technology in areas such as artificial intelligence, computational thinking, robotics, CS education, social and human-centered computing, and machine interactions.

### **Grants/Projects**

- “Bridge the Tech Gap” funded by the Alumni Engagement Innovation fund (AEIF) – 25,000USD
- “Mentors Beyond Borders”, A Mission Driven Alumni Outreach Proposal funded by the US Embassy Cameroon - 10,000USD
- “3D Printing for Teachers” A 3D printing project for female teachers supported by the Embassy of Israel in Cameroon – 10,000 USD.  
“STEM Your School” Funded by IIE/WeTech 20,000 USD <http://www.iie.org/Programs/WeTech>
- “Girls STEM Induction Program” Funded by the British high commission Cameroon – 3millionXAF.
- “AI Family challenge by Curiosity Machines” sponsored by Iridescent – 5000USD <https://www.curiositymachine.org/aichallenge/> -
- First Robotics team Cameroon sponsored by <https://first.global/>

### **Speaker/Presentation Experience**

- Speaker at the Women in STEM conference in Dubai February 2014 [www.womeninstem.com](http://www.womeninstem.com)
- Speaker on a Panel at the HIMMS Conference November 2015 at Washington DC on the topic: Empowering Women through Digital Literacy <http://www.himss.org/>.
- Speaker at the Digital Reunion NxSE conference at La Reunion Island November 2016.
- Speaker at the Cameroon Digital conference, May 2017 [www.cameroundigital.com](http://www.cameroundigital.com)
- Moderator of a Startup Panel organized by the European Investment Bank December 2017.
- Presenter at the Global Entrepreneurship Summit 2017 at Hyderabad India.
- Moderated several panels at the US Embassy Cameroon on Women, Technology and Entrepreneurship.
- A prominent speaker in most Women and Girls in STEM Conferences in Cameroon.
- Speaker at the European Development Days EDD 2018, on June 6<sup>th</sup>.

- Speaker/panelist at a High-Level summit organized by the Lisbon Council and the World bank on “Development in the digital Age” with Vice President of the European Commission and Chief Economist for Europe and Central Asia world bank Group.