VICTOR YOUDOM KEMMOE

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1523 Roswell Rd Apt 315, Marietta, Georgia, 30062, USA

EDUCATION

Master of Science in Computer Science July 2020
Kennesaw State University, Georgia, USA
GPA: 3.88/4.0; Advisor: Dr. Junggab Son
Thesis: Leveraging Smart Contracts for Asynchronous Group Key Agreement in Internet of Things

Bachelor of Science in Computer Science December 2018
Kennesaw State University, Georgia, USA
GPA: 3.79/4.0

RESEARCH INTERESTS

- Applied Cryptography
- Blockchain and Smart Contract
- Machine Learning in Cybersecurity

EXPERIENCE

Graduate Research Assistant January 2019 - July 2020
Kennesaw State University, Georgia, USA

- Developed a novel asynchronous group key agreement protocol for IoTs based on smart contracts. The protocol uses a smart contract to outsource part of the computations and supports post-compromise security. Simulated the proposed scheme using Ethereum blockchain platform. *Work to be published in IEEE SMC 2020*
- Analyzed the current state-of-the-art technologies using smart contract and made propositions on future directions. *Work published in IEEE Access, vol. 8, 2020*
- Participated in the development of an anomaly detection scheme – on a computer network – using deep learning. *Work to be published in ICCCN 2020*

Tutor August 2018 - December 2018
SMART Center - Kennesaw State university, Georgia, USA

- Tutored fellow undergraduate students in Mathematics, Physics, and Chemistry

Software Engineer Intern July 2017 - August 2017
ITS Cameroon, Yaoundé, Cameroon

- Participated in the implementation of the company's website. Used UIKit as CSS framework
- Implemented a cross-platform (Windows-Linux) file server with Samba

PUBLICATIONS

William Stone, Daeyoung Kim, *Victor Youdom Kemmoe*, Mingon Kang, and Junggab Son, **Rethinking the Weakness of Stream Ciphers and Its Application to Encrypted Malware Detection**, IEEE Access, Vol.8, pages 191602-191616, 2020. Link:https://ieeexplore.ieee.org/document/9222070

Victor Youdom Kemmoe, Yongseok Kwon, Seunghyeon Shin, Rasheed Hussain, Sunghyun Cho, and Junggab Son, **Leveraging Smart Contracts for Asynchronous Group Key Agreement in Internet of Things**, accepted in IEEE SMC 2020, pages 1-6, October, 2020.

Victor Youdom Kemmoe, William Stone, Jeehyeong Kim, Daeyoung Kim, Junggab Son, **Recent Advances in Smart Contracts: A Technical Overview and State of the Art**, IEEE ACCESS, Vol.8 , pages 117782 - 117801, 2020. Link: https://ieeexplore.ieee.org/document/9125932

Daniel Y. Karasek, Jeehyeong Kim, *Victor Youdom Kemmoe*, Md Zakirul Alam Bhuiyan, Sunghyun Cho, and Junggab Son, **SuperB: Superior Behavior-based Anomaly Detection Defining Authorized Users' Traffic Patterns**, 29^{th} International Conference on Computer Communications and Networks (ICCCN), pages 1-9, August, 2020.
Link: https://ieeexplore.ieee.org/document/9209657

SERVICES

- I have been a reviewer for the following conferences: WASA 2019, COCOON 2019
- **Senior member of the BYTE club**, PKFokam Institute of Excellence, 2017: I mentored freshman and sophomore students in different class projects related to Computer Science

SELECTED PROJECTS

Complete list available on my github page: https://github.com/VicXekro

FHE-ProLang: Implemented a program which translates a custom programming language into C++ with some properties of Homomorphic Encryption (HE) added to the result. The custom programming language uses a syntax which is simpler than C++.

- Tools used: C++, Microsoft SEAL library

N-Body problem: Implemented a program that leverages MPI and OpenMP to solve the N-Body problem and compared my solution with a serial implementation.

- Improved the run time by 62% on average for 5000 to 10000 entities.
- Tools used: C++, MPI, OpenMP

Digital Image Code: An image processing application. The project includes Filters (Robert, Sobel, Prewitt, Krish), Masks, Morphologies, Textures.

- Added voice command controls for the activation of some features by using Sphinx Library
- Nominated best project of the class (out of 4)
- Tools used: Java, JavaFx, Sphinx Library

TECHNICAL SKILLS

- **General**: (Proficient) C++, Java, Python, SQL, Linux, Git, Latex. (Familiar) MATLAB, C#
- **Framework**: (Proficient) OpenMP, MPI. (Familiar) CUDA
- **Blockchain**: (Proficient) Ethereum, EOSIO

AWARDS AND HONORS

- 1^{st}**(Fall 2019) and** 2^{nd} **(Spring 2020) place Graduate Research Project at C-Day**
- 2^{nd} **place winner CCSE Hackathon[team of 3]**, Fall 2019
- **Outstanding Undergraduate Student in Computer Science**, December 2018

LANGUAGES

English (Proficient), French (Native)