

XXXXXXX XX, XXXX

The Search Committee
Department of XXXXXXXX
The University of XXXXXXXX,
XXXXXXX

Dear Search Committee,

I am writing to apply for the position of Assistant Professor in the Department of XXXXXXXX at the University of XXXXXXXX. I am currently a Ph.D. candidate in the School of Computing at the University of Nebraska-Lincoln, and I am expected to graduate in August 2025. My dissertation is titled *Authentication and Message Integrity Verification for Emerging Wireless Networks*. I am confident that my expertise in cybersecurity, particularly in network and wireless security, will complement and enhance the research and educational programs within your department.

My research interests lie at the intersection of network security, privacy, and applied cryptography, with a focus on ensuring message integrity and authentication in wireless systems lacking robust security infrastructures. Application domains include Agricultural IoT, autonomous vehicles, molecular communication, and other critical sectors that rely on secure communication. Under the mentorship of my doctoral advisor, Prof. Nirnimesh Ghose, I have developed innovative security mechanisms that leverage physical layer characteristics, machine learning, and cryptographic techniques to establish secure communication in heterogeneous environments. My work on protocols like STUN (Secret-Free Trust-Establishment for Underground Wireless Networks) and VET (Autonomous Vehicular Credential Verification using Trajectory and Motion Vectors) showcases my commitment to addressing critical cybersecurity challenges with practical, scalable solutions.

Throughout my Ph.D. journey, I have built a strong publication record in leading peer-reviewed conferences and journals, such as EAI SecureComm and IEEE INFOCOM. I have two manuscripts under review at IEEE Transactions on Wireless Communications and IEEE Transactions on Molecular, Biological, and Multi-Scale Communications. My research has been supported by grants from the NSF and the Nebraska Center for Energy Sciences Research, reflecting the impact and significance of my contributions. In addition to my research achievements, I have gained valuable teaching experience as a Teaching Assistant for courses like Cryptography & Security (CSCE 477/877) at the University of Nebraska-Lincoln, where I applied active learning techniques to help students grasp complex concepts.

I am excited about the opportunity to join the XXXXXXXX Department at the University of XXXXXXXX. I am eager to collaborate with faculty members such as Dr. XXXXXXXX, Dr. XXXXXXXX, Dr. XXXXXXXX, and Dr. XXXXXXXX, whose research interests align closely with mine. I believe that my research expertise, collaborative spirit, and dedication to teaching will significantly contribute to the growth and success of your department. I am willing to provide references from Prof. Nirnimesh Ghose, Prof. Shuai Nie, Prof. Mehmet C. Vuran, Prof. Judy Goldsmith, Prof. Yi Qian, and other esteemed colleagues who can attest to my qualifications and potential as a faculty member.

Thank you for considering my application. I look forward to the opportunity to discuss how my background, skills, and vision align with the goals of the XXXXXXXX Department.

Sincerely,

Ebuka Philip Oguchi