

Boaz Daniel Graham

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M.Sc. student in Information Technology at ÉTS researching wireless physical-layer security and post-quantum cryptography for 6G, with experience in link-level simulation, machine learning and software engineering. Seeking a research internship at Ericsson.

Education

M.Sc. in Information Technology, thesis-based • 2025 - Present

École de technologie supérieure (ÉTS), Montréal

Master's in Computer Science, project-based • 2019 - 2022

University of Buea, Cameroon | Deep-learning voice activity detection for GSM telephony

B.Eng. in Computer Engineering, Network Engineering • 2015 - 2019

University of Buea, Cameroon

Research

Post-quantum security over OFDM and AFDM in a MU-MIMO uplink

Ongoing research extension | In preparation for IEEE ICC submission

- Comparing ML-KEM key establishment with AES-256-GCM data encryption against GGH physical-layer encryption over OFDM and AFDM using MATLAB and Python.
- Evaluating high-Doppler operation and massive MIMO scaling from 8 to 128 base-station antennas; comparing joint LMMSE and per-subcarrier receivers.
- Assessing ML-KEM key delivery with CRC, LDPC coding and HARQ; measuring handshake success, airtime, BER/BLER, key-material overhead and computational cost alongside classical and quantum attack-cost estimates.

Lattice-Based Physical Layer Security for 6G under Realistic Multiuser MIMO Channels

B. D. Graham, A. Mohammad and B. Selim | Submitted manuscript

- Evaluated uncoded GGH encryption in a four-user, eight-antenna MU-MIMO OFDM uplink using Sionna, 3GPP TR 38.901 channels, perfect CSI and LMMSE equalization.
- Analyzed block-wide propagation of residual equalization errors during lattice decryption and the resulting reliability floors under frequency-selective fading.

Selected Engineering Experience

Prositeweb Inc. | Mar 2026 - Present

Full Stack Developer

- Develop WordPress and Joomla solutions and API integrations; delivered bilingual booking workflows and server-side payment validation.

Velte Technology Solutions | 2023 - 2025

Senior Full Stack Developer

- Led CMS and API integrations using Next.js, React and TypeScript; introduced Cypress tests and improved application performance.

Velte Technology Solutions | Jul - Aug 2026

Volunteer Security and Systems Support

- Supported Linux incident investigation, SSH and firewall hardening; documented Bash verification and service recovery procedures.

Technical Skills and Languages

Research and analysis: MATLAB, 5G Toolbox, Python, Sionna, NumPy, pandas, scikit-learn; link-level simulation, OFDM/AFDM, MU-MIMO, LMMSE, lattice cryptography.

Software and systems: TypeScript, JavaScript, PHP, SQL, REST APIs, Git, Linux, Bash, Docker, CI/CD.

Languages: English and French - spoken and written proficiency.