Reinhardt Rading

Research Associate

University of the Federal Armed Forces Hamburg

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Research Interests

- Application of optical metrology in industrial manufacturing, sensors, and defense applications.
- Application of distributed fiber sensing in seismology and military applications.
- High capacity optical communications and networks.
- Nonlinear Kerr effects in optical fiber systems.

Education

Ph.D. Electrical Engineering 2025
University of the Federal Armed Forces Hamburg, Hamburg, Germany.

- Optical sensors, communication and networks

M2 in Optical Networks and Photonic Systems 2022
Institut Polytechnique de Paris, Palaiseau, France.

- Main areas include: optoelectronics application of photonics.
- Thesis -**The characterization and development of an optical seismometer**- iXblue.

MSc. Communication Engineering 2021
Universita di Parma, Parma, Italy.

- Main areas include: optical communications, optical networking, wireless communications, photonic devices.
- Thesis - **The interplay of mode dispersion with nonlinear interference in fiber optic systems**.

BSc. Electrical Engineering 2016
Kenyatta University, Nairobi, Kenya.

Publications

4. **Rading, R.**, (2022). Interplay of Modal Dispersion with Nonlinear Impairments on Mode Division Multiplexed Fibers- Submitted to 5th IEEE Workshop on Recent Advances in Photonics Conference, March 2022.
3. **Rading, R.**, (2021). Effects of Mode Dispersion on Cross-phase modulation on Mode Division Multiplexed Optical Fibers- Presented at Junior Wireless and Optical Communications Conference, 2021.

2. **Rading, R.**, (2021). Cost Benefit Analysis Study of Either Using Elastic or Mixed Line Rate Optical Networks: case study of American and German optical networks.

1. **Rading, R.**, (2020). Evaluation of Non-linearity Effects on a Dispersion Managed (DM) Optical Fiber: Performance and Transmission Analysis of 16QAM Modulation using Split Step Fourier Method.

Papers in Preparation

1. **Rading, R.**, Serena. P., Lasagni. C., Interplay of modal dispersion and nonlinear interference in fiber optic systems.

Employment

05/2016 – 01/2017	**Flight Operations Engineer**, Kenya Airways, Nairobi, Kenya.
03/2017 – 06/2018	**Energy Engineer**, EatonTowers (Acquired by American Towers), Nairobi, Kenya.

Professional Societies & Activities

2015 – present	Member of the Institute of Electrical and Electronics Engineering (IEEE).
2015 – present	Member of the IEEE Signal Processing Society .
2015 – present	Member of the IEEE Communication Society.
2015 – present	Member of the IEEE Photonics Society.
2016 – 2017	Member of the IEEE Region 8 Continuing Education Committee.
2016 – 2018	Chair, Conferences, Workshops, and Activities Committee, IEEE Kenya Section .
2017 – 2018	Secretary, IEEE Computer Society, IEEE Kenya Section .
2019 – 2020	Member of the IEEE Region 8 Education and Professional Activities Committee.

Certifications

2016 – No Expiry	Cloud Application Development Using IBM Bluemix (IBM).
2017 – No Expiry	IEEE Volunteering Training Program-IEEE VoLT (IEEE).
2020 – 2023	Sanctions, Embargoes, Export Controls and Anti-Boycott Laws (IEEE).
2020 – 2023	Anti-Bribery and Corruption (IEEE).

Expertise & Skills

Languages	English(Native), Swahili(Native), Luo(Native), Spanish(Intermediate), Italian (Intermediate), French (Intermediate), German(Beginner).
Programming	Java, Unix, Python, MATLAB, LaTeX.
Waveform modeling	COMSOL, CST STUDIO.
Technologies	Cloud Computing (Resource allocation, application development, networking and architecture): IBM Bluemix, Oracle Cloud Infrastructure.