

CHOKRI NOUAR

PhD in Applied Mathematics | Cryptography and Information Security

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ACADEMIC PROFILE

PhD in Cryptography and Information Security, specializing in applied mathematics, chaotic dynamical systems, pseudo-random generation, multimedia encryption, data privacy, and post-quantum cryptography. Experience teaching mathematics at secondary-school and university levels, including complex analysis and C programming. Lead author of indexed publications and scientific communications, with practical experience in MATLAB, Python, C, and Java. Academic profile focused on teaching excellence, research supervision, and interdisciplinary projects in mathematics, cybersecurity, and artificial intelligence.

HIGHER EDUCATION

2023	PhD in Cryptography and Information Security Faculty of Sciences, Rabat - Applied Mathematics
2014	Professional Bachelor's Degree in Mathematics Education École Normale Supérieure, Rabat
2012	Master's Degree in Mathematics and Statistics Faculty of Sciences, Rabat
2010	Bachelor's Degree in Mathematics and Computer Science Faculty of Sciences, Rabat

TEACHING EXPERIENCE

Since 2017	Mathematics Teacher Regional Academy of Education and Training, Rabat-Salé-Kénitra • Teaching, lesson planning, assessment, and learner support.
2018-2023	Adjunct University Teaching Documented cumulative teaching volume: 150 hours • SMPC-S3 (42 h, 2018-2019), SVI-S1 (36 h, 2019-2020), SMPC-S1 (33 h, 2021-2022), and SMPC-S3 (39 h, 2022-2023).
2019	Adjunct Lecturer - C Programming and Dev-C++ École Technique des Sciences d'Informatique Appliquées et Management, Témara
2017	Adjunct Lecturer - Complex Analysis, SMP, Semester 3 Faculty of Sciences, Rabat
2014-2016	Mathematics Teacher Groupe Éducatif Allal Aouad, Salé

RESEARCH EXPERIENCE AND EXPERTISE

2023	Research Internship in Post-Quantum Cryptography University of Ottawa / LOGIN ID, Canada • Analysis of an encryption system to assess its resistance to attacks using quantum computers.
2022	National Learning Assessment Programme - PNEA 2022 Témara • Installation, organization, and delivery of online assessments.

SCIENTIFIC PUBLICATIONS

2025	Integrating AI into Instructional Materials Development: Moroccan High School EFL Teachers' Perceptions, Practices, Challenges, and Support Needs International Journal of Linguistics and Translation Studies, 6(4). DOI: 10.36892/ijlts.v6i4.626 • Co-author
2025	Image Encryption Scheme Based on New Model of Gingerbreadman Map Advances in Intelligent Systems and Digital Applications, pp. 400-409. DOI: 10.1007/978-3-031-95326-2_39 • Lead author
2022	Modelling the Relationship between Privacy and Loss of Data Utility When Analysing the Data Journal of Theoretical and Applied Information Technology, Vol. 100, No. 22 • Lead author
2020	A Pseudo-Random Number Generator Using Double Pendulum Applied Mathematics & Information Sciences, 14(6), pp. 977-984. DOI: 10.18576/amis/140604 • Lead author

- 2019** **A Pseudo Random Bit Generator Based on a Modified Chaotic Map**
International Journal of Network Security, 21(3), pp. 402-408. DOI: 10.6633/IJNS.201905.21(3).06
• Lead author

SCIENTIFIC COMMUNICATIONS

- 2025** **Towards a Post-Quantum Cryptography for the Internet of Things**
1st International Conference on Mathematics and Applications (ICMA-2025), Casablanca
• Lead author
- 2025** **Image Encryption Scheme Based on New Model of Gingerbreadman Map**
International Conference on Intelligent Systems and Digital Applications (ISDA'25), FST Settat
• Speaker, lead author
- 2018** **A New Method for Voice Encryption Based on Chaotic System**
International Conference MOCASIM2018, Marrakech
• Speaker, lead author
- 2013** **GSM Security**
Scientific Days: Information Systems Security, Agadir
• Speaker

RESEARCH AREAS

- Symmetric, asymmetric, hybrid, chaotic, and post-quantum cryptography
- Chaotic dynamical systems and pseudo-random number generation
- Image and voice encryption; mobile-network and Internet of Things security
- Data privacy, privacy-utility trade-offs, and secure data analysis
- Applications of artificial intelligence to education and instructional-material design

SCIENTIFIC PROJECTS AND IMPLEMENTATIONS

- 2023-2025** **MATLAB development of an image-encryption scheme based on a new Gingerbreadman Map model.**
- 2022** **Python implementation of a model analysing the privacy-data utility trade-off.**
- 2020** **C implementation of a pseudo-random number generator using a double pendulum.**
- 2019** **C implementation of a pseudo-random bit generator based on a modified chaotic map.**
- 2018** **MATLAB application implementing a voice-encryption method based on a chaotic system.**
- 2013** **Java master's project proposing a trust method for GSM networks.**
- 2010** **Java undergraduate project on message authentication codes (MAC).**

SCIENTIFIC AND TECHNICAL SKILLS

Mathematics: analysis, algebra, arithmetic, number theory, dynamical systems, probability, statistics, operations research, and linear programming.

Programming: C, MATLAB, Python, Java; modelling, numerical simulation, and cryptographic prototyping.

Cybersecurity: cryptography, authentication, integrity, digital signatures, certificates, mobile-network security, Red Team, Blue Team, and threat analysis.

Networks and systems: Windows, Linux, local and mobile networks, OSI and TCP/IP, GSM, UMTS, and LTE.

CERTIFICATIONS AND TEACHING SKILLS

- 2026** **ISC2 Certified in Governance, Risk, and Compliance (CGRC) Cert Prep**
Infosec / LinkedIn Learning
- Fortinet NSE 6 Certified in Secure Networking
 - Fortinet NSE 4 Certified in FortiOS
 - Fortinet NSE 3 Certified in Cybersecurity
 - Fortinet NSE 2 Certified in Cybersecurity
 - Fortinet NSE 1 Certified in Cybersecurity
- 2018** **Microsoft Certified Educator**
Technology Literacy for Educators - 21st Century Learning Design
- 2018** **Microsoft Office Specialist 2016**
Microsoft Word, Excel, and PowerPoint
- Course, learning-material, tutorial, and assessment design
 - Learner supervision and accessible explanation of complex mathematical and computing concepts
 - Digital tools for teaching, assessment, and collaboration

ACADEMIC KEYWORDS

Applied Mathematics | Cryptography | Cybersecurity | Dynamical Systems | Pseudo-Random Generation | Multimedia Encryption | Data Privacy | Post-Quantum Cryptography | Internet of Things | Artificial Intelligence in Education