

# YOUSSEF EL HOUSNI

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yelhousni.github.io

## WORK EXPERIENCE

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### EY Blockchain, Paris

August 2018 - present

*Cryptography Engineer*

- Applied cryptography research and implementation (Zero-knowledge proofs, elliptic curves, bilinear groups...).
- Blockchain development with focus on privacy.

### Secure-IC, Rennes

October 2016 - August 2018

*Cryptography Engineer*

- Elliptic curve cryptography: Theory, implementations and countermeasures against side-channel and fault injection attacks.
- Pairing-based cryptography (id-based encryption).
- Post-quantum cryptography (Isogenies-based and code-based cryptography i.e. SIKE, DAGS) (*submitted a paper with DAGS team, a NIST PQC candidate*)
- Mathematical modeling of a hardware TRNG (True Random Number Generator) (*a patent pending and a published paper*) and a hardware PUF.
- Video steganography (up to UHD@60fps 10-bit) on embedded devices (Hisilicon Hi2798CV200 set-top box).

## EDUCATION

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### Ecole Polytechnique, Paris

November 2019 - Present

PhD in cryptography

project-team GRACE under LIX and INRIA Saclay

supervisors: Daniel Augot and François Morain

### ENSEIRB-MATMECA, Bordeaux

September 2013 - September 2016

MEng in Electronics.

majors: Image and signal processing

## TECHNICAL AND SOFT SKILLS

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<b>Software</b>	C, C++, Python, SageMath, Bash, Latex
<b>Languages</b>	English, French, Arabic

## PUBLICATIONS

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- [1] Danger, Jean-Luc and **El Housni, Youssef** and Facon, Adrien and Gueye, Cheikh T. and Guilley, Sylvain and Herbel, Sylvie and Ndiaye, Ousmane and Persichetti, Edoardo and Schaub, Alexander, "On the Performance and Security of Multiplication in  $GF(2^N)$ ", Cryptography Journal, Volume 2, 2018. DOI: 10.3390/cryptography2030025
  - [2] Guilley, Sylvain and **El Housni, Youssef** "Random Numbers Generation: Tests and Attacks", 2018 Workshop on Fault Diagnosis and Tolerance in Cryptography (FDTC) pages: 49-54 DOI: 10.1109/FDTC.2018.00016

## PRE-PRINTS

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[1] Guilley, Sylvain and **El Housni, Youssef** "*Making randomness tests flexible*"

## PATENTS

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*(Pending)* "Device and method for testing a sequence generated by a random number generator"

**El Housni, Youssef** and Lozac'h, Florent

Secure-IC S.A.S.

## EXTRA-CIRRICULAR

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- Co-Organizer of "ZK-PAR" - A technical meetup held in Paris focussing on privacy-preserving technology in blockchains.
- Played in the moroccan regional championship with Tetouan local team from 2000 to 2011.