# Huawei Wu

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Vitry-sur-Seine, Paris, France

## EDUCATION

**Tsinghua University**, China | Ph.D.                                                2018 — 2024

- Major: Mathematics
- Research Interests: Algebraic Geometry and Number Theory, Coding Theory and Cryptography

**Huazhong University of Science and Technology**, China | B.S.                       2014 — 2018

- Major: Information and Computational Science (School of Mathematics and Statistics)
- Relevant Coursework: Probability Theory, Stochastic Process, C++ Programming, Data Structure
- GPA: 4.0 (No.2 in Major)

## EXPERIENCE

**Université Paris VIII**, France | Postdoctoral Fellow                              2024 — present

- Advisor: Professor Sihem Mesnager
- Research Interests: Cryptographic Functions with Desirable Properties

## HONORS AND AWARDS

**Academic Awards**

- First Place in the 'Cryptography and Mathematics' Summer School Competition, Institute of Information Engineering, Chinese Academy of Sciences, 2023
- National Second Prize of the 8th Mathematics Competition of Chinese College Students (16th Place), 2017

**State-Level Awards**

- National Scholarship (¥8,000), Twice
- National Encouragement Scholarship (¥5,000), 2015

**Municipal Awards**

- Outstanding Graduate of Wuhan, 2018

**School-Level Awards**

- Tsinghua University Comprehensive Scholarship, 2022
- Title of Merit Student of Huazhong University of Science and Technology, Three Times

## RESEARCH

- **Wu, H.**[*], Yang, J. and Feng, K., 2023. The Weight Distributions of Two Classes of Linear Codes from Perfect Nonlinear Functions. IEEE Transactions on Information Theory, vol. 70, no. 6, pp. 4102-4109. (IF: 2.2)
- **Wu, H.**[*], Yang, J. and Feng, K., 2024. Circular External Difference Families: Construction and Non-Existence. Designs, Codes and Cryptography, pp.1-14.
- Xu, G., Cao, X., Luo, G.[*] and **Wu, H.**, 2024. Infinite Families of 3-Designs from Special Symmetric Polynomials. Designs, Codes and Cryptography, pp.1-23.
- Mesnager, S. and **Wu, H.**[*], 2025. On the Differential and Walsh Spectra of $x^{2q+1}$ over $\mathbb{F}_{q^2}$. Finite Fields and Their Applications, 103, p.102576.
- Mesnager, S. and **Wu, H.**[*], 2025. The Differential and Boomerang Properties of a Class of Binomials. IEEE Transactions on Information Theory, doi: 10.1109/TIT.2025.3550851. (Early Access)
- Mesnager, S. and **Wu, H.**[*], 2025. An In-Depth Study of the Power Function $x^{q+2}$ over the Finite Field $\mathbb{F}_{q^2}$: the Differential, Boomerang and Walsh Spectra, with an Application to Coding Theory. arXiv preprint arXiv:2407.07710.

Remark: The asterisk * indicates the corresponding author.

## SKILLS AND INTERESTS

- Technical: JavaScript, Python, Scientific Computing, Desktop Application Development, Deep Learning
- Interests: Music (Piano & Singing), Coding, Traveling

## PROGRAMS

- **TranslatorGPT**: A ChatGPT-based translation application developed using Tauri, with main features including translation by selecting, translation by screenshot, and paper proofreading. ⌂