CURRICULUM VITAE

Zheng Xiangsheng

Physics MSc student · Western University · London, Ontario

helloworld.3a@gmail.com
github.com/hello-zxs
zhengxs.com

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Transcripts and referees available on request

EDUCATION

Western University — MSc in Physics

2026 – PRESENT

London, Ontario, Canada

- Research direction: transformation optics, geodesic lenses and quantum optics.
- Current focus: reproducible ray tracing, surface tolerance, and single-photon interference.

Xiamen University Malaysia — BSc (Hons) Physics

2022 – 2026

Sepang, Malaysia

- Thesis: *Ray tracing and equivalent geodesic lenses for the Morse lens*.
- Advisor: Dr. Yap Seong Shan. Co-advisor: Prof. Huanyang Chen.

RESEARCH INTERESTS

- **Transformation optics** — coordinate transformations and effective media, conformal mapping, cloaks, metasurface design.
- **Geodesic lenses** — metric equivalence and ray tracing for Morse, Luneburg and Eaton profiles; closure and surface tolerance.
- **Quantum optics** — single-photon interference, path information, visibility and quantum erasure.

THESIS

Ray tracing and equivalent geodesic lenses for the Morse lens

2026

BSc (Hons) thesis · Xiamen University Malaysia

- Proved that conformal Morse lenses are equivalent to the (A = B, C = 1) subclass of Cornbleet's general family, unifying the Cornbleet–Rinous (1981) and Šarbort–Tyc (2012) lines of work.
- Constructed equivalent geodesic surfaces for the Luneburg, Eaton and intermediate Morse profiles, and verified them by ray tracing.
- Built an end-to-end pipeline from index profile to surface metric to numerical ray paths.

Read the full text

PUBLICATIONS & WRITING

- **Thesis** — X. Zheng, “Ray tracing and equivalent geodesic lenses for the Morse lens,” BSc (Hons) thesis, Xiamen Univ. Malaysia, 2026.
- **Notes** — Field notes on transformation optics, numerics and quantum optics, 2026.

TECHNICAL SKILLS

PROGRAMMING	Python (NumPy, SciPy, Matplotlib) for ray tracing and numerics; git for version control.
SYMBOLIC	Mathematica for symbolic limits, series and cross-checks.
SIMULATION	COMSOL for electromagnetic field simulation.
WRITING	LaTeX, Markdown, scientific figures and web typesetting.
LANGUAGES	Chinese (native), English (academic writing and presentations).

REFERENCES

Available on request. Please write to helloworld.3a@gmail.com.

THIS CV IS ALSO AVAILABLE AS A PDF.