

Curriculum vitae: Hannah Yanhua Zong

Assistant Professor of Practice
School of Applied and Creative Computing
Purdue University
West Lafayette, Indiana 47906
August 2024 – Present
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Teaching Experience

CGT 270 – Introduction to Data Visualization

Redesigned the course to emphasize interactive dashboards, real-world datasets, and professional analytics workflows. Integrated structured critique and scaffolded assignments to strengthen analytical reasoning and intentional design.

CGT 353 – Interactive Web Applications

Developed a new course focused on full-stack web application design and structured, milestone-based project development. Emphasized user-centered design, application architecture, and iterative production workflows.

CGT 370 – Interactive Data Visualization

Redesigned the course to deepen students' analytical and technical fluency in interactive visualization. Emphasized data transformation, encoding strategy, and critical evaluation to bridge foundational principles and advanced studio practice.

CGT 470 – Data Visualization Studio

Redesigned the course to integrate graph analytics, explainable AI visualization, and emerging interactive technologies. Structured the studio around open-ended, critique-driven projects that emphasize analytical rigor, ethical visualization practices, and research-informed design.

CGT 575 – Data Visualization (Purdue Online)

Redesigned the online course to integrate visualization principles, case-based critique, and project-based assessment. Reorganized asynchronous modules to balance conceptual depth with applied analytical practice.

Publications in Visualization & Analytics

1. Zong, H.Y., Khanal, N., Yang, Q., Qaiser, S., Chen, S.C., Liu, H.J., Qian, C.Z., Chen, Y.V., Zhao, J. (2025). Melody Way: Visualizing Influence, Collaboration, and Genre Evolution in the Music Industry. Proceedings of the IEEE Visual Analytics Science and Technology (VAST) Challenge.
2. Qaiser, S., Zhao, J., Khanal, N., Yang, Q., Chen, S.C., Liu, H.J., Zong, H.Y., Chen, Y.V., Qian, C.Z. (2025). BlossomNet: Visualizing Influence and Community Evolution with Floral Glyphs in Large Person-Centric Knowledge Graphs. Proceedings of the IEEE Visual Analytics Science and Technology (VAST) Challenge.

3. Zong, H., Jiang, X., Qian, C., Kong, N., Fei, S., Chen, Y. Interactive Spatiotemporal Visualization for Understanding the Spread of Invasive Species. Proceedings of the 59th Hawaii International Conference on System Sciences (HICSS 59).

Awards & Honors

Research & Professional Recognition

- VAST Challenge Award – Expressive Design, IEEE VIS (2025)
- VAST Challenge Award – Comprehensive Treatment of Time, IEEE VIS (2025)

Prior Academic Honors

- Japanese Government (MEXT) Scholarship
- Global Leadership Research Fellowship

Grants

- ACC Curriculum Seed Grant (2026). Principal Investigator. Proposal on structured scaffolding in data visualization pedagogy. (Submitted)

Student Mentorship & Graduate Committee Service

- Crews, Sophia – Undergraduate Research Mentorship (Oct 2025 – Feb 2026)
- Yang, Qi – Thesis Committee Member
- Sun, Zhuoyang – Thesis Committee Member
- Khanal, Nabin – Thesis Committee Member

Professional Service

- Reviewer, IEEE VIS (TopoInVis / alt.vis tracks)
- Reviewer, Hawaii International Conference on System Sciences (HICSS)

Curriculum Development & Pedagogical Innovation

- Led vertical alignment of visualization curriculum across introductory, intermediate, and studio-level courses.
- Integrated emerging analytical methodologies, explainable AI visualization, and ethical design practices into advanced coursework.
- Implemented structured critique frameworks and scaffolded project models to strengthen analytical reasoning and design intentionality.
- Modernized both online and residential delivery to balance conceptual rigor with applied, project-based learning.

Education

M.S. in Computer Graphics Technology, Purdue University, USA	05/2017 – 05/2019
Ph.D. in Materials Chemistry, Kyoto University, Japan	10/2007 – 09/2010
M.S. in Materials Science, Shanghai Institute of Optics and Fine Mechanics, China	09/2004 – 07/2007

B.S. in Physics, East China Normal University, China

09/2000 – 07/2004

Prior Work Experience

Senior Web Developer, Purdue University – West Lafayette, IN	07/2023 – 07/2024
Web Developer, Purdue University – West Lafayette, IN	02/2019 – 07/2023
Global Leadership Research Fellow, Kyoto University – Kyoto, Japan	10/ 2010 – 09/2011

Prior Publications

1. Yanhua Zong, X. Meng, K. Fujita, K. Tanaka. *Multicolor light emissions from mesoporous silica particles embedded with Ga_2O_3 nanocrystals*. Optical Materials Express, 4, 518 (2014).
2. X. Meng, K. Fujita, Y. Moriguchi, Y. Zong, K. Tanaka. *Metal-Dielectric Core-Shell Nanoparticles: Advanced Plasmonic Architectures Towards Multiple Control of Random Lasers*. Advanced Optical Materials, 1, 573 (2013).
3. K. Tanaka, K. Fujita, Y. Maruyama, Y. Kususe, H. Murakami, H. Akamatsu, Y. Zong, S. Murai. *Ferromagnetic induced by lattice volume expansion and amorphization in $EuTiO_3$ thin films*. Journal of Materials Research, 28, 1031 (2013).
4. H. Akamatsu, K. Fujita, H. Hayashi, T. Kawamoto, Y. Kumagai, Y. Zong, et al. *Crystal and Electronic Structure and Magnetic Properties of Divalent Europium Perovskite Oxides $EuMO_3$ ($M = Ti, Zr, Hf$): Experimental and First-Principles Approaches*. Inorganic Chemistry, 51, 4560 (2012).
5. Y. Zong, K. Fujita, H. Akamatsu, S. Nakashima, S. Murai, K. Tanaka. *Local structure of amorphous $EuO-TiO_2$ thin films probed by X-ray absorption fine structure*. Journal of the American Ceramic Society, 95, 716 (2011).
6. Y. Zong, K. Fujita, H. Akamatsu, S. Murai, K. Tanaka. *Ferromagnetic amorphous $EuZrO_3$ thin films with reentrant spin glass transition*. Physica Status Solidi (c), 8, 3051 (2011).
7. H. Akamatsu, K. Fujita, Y. Zong, N. Takemoto, S. Murai, K. Tanaka. *Impact of amorphization on the magnetic properties of $EuO-TiO_2$ system*. Physical Review B, 82, 224403 (2010).
8. T. Kolodiaznyi, K. Fujita, L. Wang, Y. Zong, et al. *Magnetodielectric effect in $EuZrO_3$* . Applied Physics Letters, 96, 252901 (2010).
9. Y. Zong, K. Fujita, H. Akamatsu, S. Murai, K. Tanaka. *Preparation and magnetic properties of amorphous $EuTiO_3$ thin films*. Journal of Non-Crystalline Solids, 356, 2389 (2010).
10. Y. Zong, K. Fujita, H. Akamatsu, S. Murai, K. Tanaka. *Antiferromagnetism of perovskite $EuZrO_3$* . Journal of Solid State Chemistry, 183, 168 (2010).
11. K. Fujita, N. Wakasugi, S. Murai, Y. Zong, K. Tanaka. *High-quality antiferromagnetic $EuTiO_3$ epitaxial thin films on $SrTiO_3$ prepared by pulsed laser deposition and postannealing*. Applied Physics Letters, 94, 062512 (2009).
12. X. Meng, K. Fujita, S. Murai, Y. Zong, et al. *Random lasers from highly transparent polymer films containing superfine silver nanoparticles*. Physica Status Solidi (c), 6, S102 (2009).
13. X. Meng, K. Fujita, Y. Zong, S. Murai, K. Tanaka. *Random lasers with coherent feedback from highly transparent polymer films embedded with silver nanoparticles*. Applied Physics Letters, 92, 201112 (2008).

14. X. Xu, G. Zhao, F. Wu, W. Xu, **Y. Zong**, et al. *Growth and spectral properties of Er:Gd₂SiO₅ crystal*. Journal of Crystal Growth, 310, 156 (2008).
15. S.S. Cai, J. Kong, B. Wu, **Y. Zong**, et al. *Room-temperature cw and pulsed operation of a diode-end-pumped Tm:YAP laser*. Applied Physics B, 90, 133 (2008).
16. X. Xu, F. Wu, W. Xu, **Y. Zong**, et al. *Growth and spectral properties of Yb,Tm:YAG crystal*. Journal of Alloys and Compounds, 462, 347 (2008).
17. H. Akamatsu, **Y. Zong**, Y. Fujiki, K. Kamiya, K. Fujita, S. Murai, K. Tanaka. *Structural and Magnetic Properties of CdFe₂O₄ Thin Films Fabricated via Sputtering Method*. IEEE Transactions on Magnetics, 44, 2796 (2008).
18. B. Yao, L. Zheng, G. Zhao, **Y. Zong**. *Judd-Ofelt Analysis of Spectroscopic Properties of Tm³⁺ Doped Lu₂SiO₅ Crystals*. Chinese Journal of Lasers, 35, 601 (2008).
19. B. Yao, Y. Li, Y. Wang, X. Duan, G. Zhao, **Y. Zong**, et al. *Efficient diode-pumped Tm:YAP laser with a pump recycling scheme*. Chinese Physics Letters, 24, 2597 (2007).
20. Y. Li, B. Yao, Y. Wang, **Y. Zong**, et al. *High efficient diode-pumped Tm:YAP laser at room temperature*. Chinese Optics Letters, 5, 286 (2007).
21. B. Yao, Y. Li, Y. Wang, **Y. Zong**, et al. *Tm:YAP laser pumped by fiber-coupled diode*. High Power and Particle Beams, 19, 1632 (2007).
22. D. Cao, G. Zhao, **Y. Zong**, J. Xu. *Properties of Ce:YAP crystals with different dopant concentration*. Journal of Chinese Rare Earth Society, 25, 509 (2007).
23. **Y. Zong**, G. Zhao, J. Zhu, J. Xu. *Growth and its spectroscopic properties of Sm:YAP crystal*. Journal of Crystal Growth, 291, 468 (2006).
24. **Y. Zong**, G. Zhao, C. Yan, X. Xu, L. Su, J. Xu. *Growth and spectral properties of Gd₂SiO₅ crystal codoped with Er and Yb*. Journal of Crystal Growth, 294, 416 (2006).