Yumeng HOU

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[Personal Page] | [Semantic Scholar] | [Google Scholar] | [Web of Science] | [LinkedIn]

1. Biography

Yumeng Hou conducts research at the intersection of digital humanities, intangible cultural heritage, creative media, and computational archives. She is defending her Ph.D. at EPFL, Switzerland, in 2024. Prior to her doctoral studies, Hou obtained her MSc in Computer Science from EPFL in 2017 and a BEng in Digital Media Technology from Zhejiang University in 2014. She has interdisciplinary experience in research, teaching, and industry, spanning fields such as digital museology, data visualization, analytics, human-computer interaction, and media cloud technologies, with a track record of academic publications, presentations, and commercial projects.

2. Education

Docteur ès Sciences (PhD), specialising in Computational Museology Oct 2020 –
Doctoral School of Digital Humanities, EPFL, Switzerland June 2024
Dissertation: "EncodingActs: Modeling, Representing and Transmitting Embodied Knowledge in Traditional Martial Arts"
Supervisor: Prof Sarah Kenderine, Head of Laboratory for Experimental Museology and EPFL Pavilions

MSc in Computer Science 2015 – 2017
School of Computer and Communication Sciences, EPFL, Switzerland
GPA: 5.4/6 | Thesis Project: "Visualizing Personal Nutrition Intake and Emotions", Supervisor: Dr Pearl Pu
Semester Projects: "MOOC Clickstream Visual Analytics", "APP Design and Development for a Smart Lunchbox"

BEng in Digital Media Technology 2010 – 2014
College of Computer Science and Technology, Zhejiang University, China
GPA: 3.8/4 | Thesis Project: "Visualizing Topic Evolutions in Wikipedia"; Supervisor: Prof Wei Chen

Exchange Student (Scholarship Recipient) 2010 – 2014
Department of Computer and Systems Sciences, Stockholm University, Sweden
GPA: A | Exchange Coordinator: Prof Preben Hansen

3. Research Experience

Doctoral Researcher 2020 – present
Laboratory for Experimental Museology, EPFL; Supervisor: Prof Sarah Kenderine
- Field of research: Computational Museology, Intangible Heritage, Cultural Informatics, Digital Archives

Visiting Researcher July – Dec 2022
Visualization Research Centre (VRC), Hong Kong Baptist University; Supervisor: Prof Jeffrey Shaw
- Field of research: Martial Arts (field study), Digital Archives, Digitization, Expanded Cinema

Research Assistant Jan – July 2017
Human-Computer Interaction Group, EPFL; Supervisor: Dr Pearl Pu
- Field of research: Affective Data Visualization, Human-Computer Interaction

Research Assistant 2013 – 2015
Visual Analytics and Intelligence Group, Zhejiang University; Supervisor: Prof Wei Chen
- Field of research: Data Visualization, Information Visualization, Visual Analytics

4. Teaching and Supervising Experience

Teaching Assistant & Lecturer & Project Mentor & Grader 2021 – 2024
- DH-404 Cultural Data Sculpting (Spring 2021/2022/2023/2024), MSc in Digital Humanities, EPFL

Master's Semester Project Supervisor
- 12-credit project in Digital Humanities; Topic: Interactive interface Fall 2023/24
- 12-credit project in Computer Science; Topic: Knowledge graph Spring 2021/22
- 10-credit project in Computation and Mathematics; Topic: Machine(/Deep) learning Spring 2020/21

Applied Project Mentor & Grader Fall 2020/21
- CS-433 Machine Learning, EPFL

Guest Lectures
- "Ontology for Intangible Heritage Archives", for *Team Langejans* at Delft University of Technology Apr 30 2024
- "Computational Museology", in *Digital Art History*, postgraduate class at University of Basel Apr 8 2022
- "Computational Motion Archives", in *Cultural Data Sculpting*, postgraduate class at EPFL Mar 31 2022
- "Visualizing Embodied Knowledge Systems", in *Cultural Data Sculpting*, postgraduate class at EPFL May 20 2021

Invited Keynotes
- Keynote at *Seminar on Digital Preservation of Cultural Heritage*, Renmin University of China Jan 5 2024
- Keynote at *The 4th International Martial Studies Conference*, South China Normal University Nov 30 2022

Teaching Assistant (pre-PhD) 2014 – 2015
- Cross-Media Data Visualization (2014/2015), Zhejiang University

5. Academic Services

Peer Reviewer 2022 – present
Digital Scholarship in the Humanities, Heritage Science, International Journal of Heritage Studies, Cogent Social Sciences, International Journal of Human-Computer Interaction, Multimedia Tools and Applications, Journal of Open Humanities Data, Digital Humanities Conference 2023, MOCO'24

PhD Student Representative, Doctoral School Committee Member 2021 – 2023
EPFL's Doctoral School of Digital Humanities (EDDH)

Conference/Seminar Organization
- PhD Workshop on "Beyond Search: Opening Up Audiovisual Content for Humanities Studies" Sep 25-26 2023
- PhD Seminar on "Human Factors in Digital Humanities" *(In addition to organizing and coordinating, I also handled fundraising, program design, lecturer invitation, PhD recruitment, and output editing.)* Dec 2-3 2021

Academic Memberships
- EuropeanaTech Communities & Research Communities, Europeana Network Association (2022 – present)
- European Association for Digital Humanities (2023 – present)
- Association for Computing Machinery (2021 – present)
- AI4LAM - Artificial Intelligence for Libraries, Archives & Museums (2021 – present)
- UNIL-EPFL dhCenter (2020 – present)

6. Grants and Awards

Europeana Network Association Member Grant (~€500): Travel bursary for attending EuropeanaTech 2023; **Recipient**.

EPFL Doc.Mobility Grant 2022 (~€12,000): A continuation of SNFS's instrument; **Recipient & PI**.

EPFL-UNIL CROSS Grant 2021-2022 (~€6,000): Collaborative Research on Science and Society grant; **Researcher**.

Swissuniversities Support Program for Activities (~€8,000): As the EDDH student representative, I successfully applied to the program with the proposal for the PhD seminar on "Human factors in Digital Humanities"; **Applicant & Coordinator**.

Finalist for Best Paper Award at Digital Humanities 2023: a prize given for the best paper by an emerging scholar.

7. Publications

Peer-Reviewed Journal Articles

Hou, Y.* & Kenderine, S. (2024). "Ontology-based Knowledge Representation for Traditional Martial Arts". *Digital Scholarship in the Humanities* (SSCI|AHCI). doi: 10.1093/llc/fqae005

Hou, Y.*, Seydou, F., & Kenderine S. (2023). "Unlocking a multimodal archive of Southern Chinese martial arts through embodied cues". *Journal of Documentation* (SSCI). doi: 10.1108/JD-01-2022-0027

Hou, Y.* & Yuan, L. (2023) "Building a knowledge graph of Chinese kung fu masters from heterogeneous bilingual data". *Journal of Open Humanities Data*, Vol 9, No. 27. doi: 10.5334/johd.136

Hou, Y.*, Kenderdine S., et al. (2022). "Digitizing Intangible Cultural Heritage Embodied: state of the art". *Journal on Computing and Cultural Heritage* (SCIE|AHCI), 15(3), pp.1-20. doi: 10.1145/3494837

Hou, Y.* (2021). "Accessing, Representing, and Transmitting Cultural Heritage through Digital Archives: challenges and opportunities". *Digital Humanities Research*, 4(1), 77-91. http://dhr.ruc.edu.cn/CN/Y2021/V1/I4/77

Alliata, G.*, **Hou, Y**. & Kenderine, S. (in press, 2024). "Augmenting access to embodied knowledge archives: a computational framework". *Digital Humanities Quarterly* (ESCI).

Adamou, A.*, Picca, D., **Hou, Y**. & Granados-García, P. L. (2023). "The Facets of Intangible Heritage in Southern Chinese Martial Arts: Applying a Knowledge-Driven Cultural Contact Detection Approach". *Journal on Computing and Cultural Heritage* (SCIE|AHCI), 16(3), pp.1-27. doi: 10.1145/3606702

Xia, J.#, **Hou, Y.** #, Chen, Y.V., Qian, Z.C., Ebert, D.S., & Chen, W.* (2017). "Visualizing rank time series of Wikipedia top-viewed pages". *IEEE computer graphics and applications* (SCIE), 37(2), 42-53. doi: 10.1109/MCG.2017.21

Peer-Reviewed Conference Proceedings

Hou, Y. (2023). "Co-encoding embodied knowledge in Southern Chinese martial arts: a collaboration between computists, experts, and digital models". *Digital Humanities 2023: Book of Abstracts.* July 10-14 2023, Graz, Austria. [abstract]

Hou, Y.*, Kenderine S. (2022). "Encoding the Whole-of-Environment Knowledge for Intangible Cultural Heritage". *AMPS Proceedings Series, 29.1 - (IN)TANGIBLE HERITAGE(S): Design, culture and technology – past, present, and future,* June 15-17, Canterbury, UK, pp.121-132.

Adamou, A.*, **Hou, Y.***, Picca, D.*, et al. (2021). "Ontology-mediated cultural contact in Southern Chinese martial arts". *Proceedings of the International Joint Workshop on Semantic Web and Ontology Design for Cultural Heritage.* https://ceur-ws.org/Vol-2949/short2.pdf

Picca, D.*, Adamou, A.*, **Hou, Y.**, et al. (2022). "Knowledge organization of the Hong Kong Martial Arts Living Archive to capture and preserve intangible cultural heritage". *Digital Humanities 2022*. July 25-29 2022, Tokyo.

Xia, J., Chen, W.*, **Hou, Y.**, et al. (2016). "*Dimscanner*: A relation-based visual exploration approach towards data dimension inspection". In *Proceedings of 2016 IEEE Conference on Visual Analytics Science and Technology* (VAST), pp. 81-90. IEEE. doi: 10.1109/VAST.2016.7883514

Contributions to Books

Kenderdine, S.*, Hibberd, L., Shaw, J., Chang, T.Z., & **Hou, Y**. (2023). "Archery Rites: Re-making Confucian Rites". *Chinese Archery Studies: Theoretical and Historical Approaches to a Martial Discipline*. Springer. <u>doi: 10.1007/978-981-16-8321-3_13</u>

Hou, Y. (2024). "Reliving martial arts classics in the digital era". *Dushu Magazine,* issue 10, Joint Publishing (H.K.). [<u>preview</u>]

Edited Volume

Hou, Y. (Ed.). (2021). *Proceedings of the EPFL PhD Seminar "Human Factors in Digital Humanities".* EPFL Infoscience.

8. Additional Oral Contributions to Conferences: Presentations, Posters, and Talks

"LAbrowser: Crafting an Interactive Interface for Exploring a Martial Arts Living Archive". Accepted to present at the *ADHO Digital Humanities Conference 2024: Reinvention & Responsibility*.

"Reimagining Cultural Archive Access and Engagement in the Digital Age". Presentation at the *International Symposium on Transformations in Museums through Digital Initiatives,* Jan 12-13 2024, UMAG The University of Hong Kong.

"The (in)accessible embodiment: Unfolding the multifaceted knowledge in traditional martial arts". Paper presentation at *EuropeanaTech 2023*, Oct 11-12 2023, Den Haag, Netherlands.

"Datafication: Towards Digital Transmission of the Living Heritage of Southern Chinese Martial Arts". Paper presentation at *The 9th Young Scholars' Forum in Chinese Studies 2023*, Sept 7-8 2023, Hong Kong.

Research presentation at the *Post-CHI Summer School on Extended Reality (XR)*, May 2-4 2023, Copenhagen.

"Augmenting Knowledge Exploration Using Agent-Based Models: A computational experiment with the HKMALA". Paper presentation at the *7th International Martial Arts Studies Conference*. June 29 - July 2 2022, Lausanne, Switzerland.

"Motion as Meaning: Representing embodied knowledge in multimodal cultural archives". Paper presentation at *DHCH@ISR 2021*, June 7-9 2021, Rome, Italy.

"Articulate Similarity: A Visual Search Framework for Embodied Knowledge in A Confucian Rites Video Archive". Poster at *16th International Digital Curation Conference (IDCC21)*, April 19 2021, Online.

"Visualizing and Understanding Ranking Trends of Wikipedia Top Viewed Pages". Poster at PacificVis 2015, 14-17 April 2015.

"Visual Data Inspection". Poster at PacificVis 2015, 14-17 April 2015.

"A Visual Analysis System for Event Detection from Network Log Data". Presentation at *IEEE VAST Challenge* 2013.

9. International Collaborations and Research Engagements

Collaborative Research Projects

- Hong Kong Martial Arts Living Archive (ongoing), in collaboration with the International Guoshu Association (Hong Kong), City University of Hong Kong, and EPFL eM+ (Switzerland).
- Lingnan Martial Arts Elite Training Programme (2021-2023), in collaboration with the Institute of Chinese Martial Studies (Hong Kong), Hong Kong Dance Company, Hong Kong Baptist University, and a group of kung fu masters.
- Computational Interoperability for Intangible and Tangible Cultural Heritage (2021-2022), in collaboration with Dr Davide Picca at University of Lausanne (Switzerland) and Dr Alessandro Adamou at Bibliotheca Hertziana (Italy).

Collaborative Exhibition Projects

- Digital Experience Centre for Chinese Classical Poetry Culture, co-curator for Keqiao edition (2020-2021), in collaboration with _ box Interaction Co. Ltd and Xinhua Zhiyun Technology Co. Ltd. [<u>demo</u>]
- 2050 Museum of Inspiration (2017-2018), in collaboration with the 2050 conference committee and Dr Wang Jian.

10. Professional Experience (Industry)

Creative Tech Lead 2019 – 2020
_box Interaction, Hangzhou, China

Digital Strategist (part-time) 2019 – 2020
NewStyle Media Group, Beijing/Hangzhou, China

Technical Product Manager – Media Cloud Service PaaS, SaaS and SDK 2017 – 2019
Alibaba Cloud, Hangzhou, China

Digital Consumer Analyst EMEA 2016 – 2017
Procter & Gamble, Geneva, Switzerland

11. Additional Exhibitions, Installations, and Creative Works

ImmerScience. **Tech lead**. An immersive learning space created for Daning International School, Shanghai. [<u>demo</u>]

Natural Origins of The Internet. **Artist**. Data Art Installation. Museum of Inspiration, Hangzhou. [<u>repo</u>]

Mirrorɹ. **Designer**. A design for the augmented era, transmitting exhibition experience to a 2D interface. [<u>blog</u>]

AquA. **Designer**. A virtual aquarium motivating knowledge sharing. Médecins Sans Frontières (MSF), Geneva. [<u>repo</u>]

MOOC Learning Flow. **Designer & Developer**. A visualization of learners' path with outcome prediction. [<u>repo</u>]

EmovDiary. **Designer & Developer**. An interactive visual tool reviewing journeys on nutrition intake and emotions. [<u>demo</u>]

12. Language skills

Mandarin (native), English (proficient), French (intermediate/B1), Cantonese (elementary).