Yumeng HOU

Laboratory for Experimental Museology, Digital Humanities Institute, EPFL

[Address] eM+, Rue des Jordils 41, 1025 St-Sulpice, Switzerland | [Email] yumeng.hou@epfl.ch

[Personal Page] | [ORCID] | [Google Scholar] | [LinkedIn]

1. Education

Docteur ès Sciences (PhD), specializing in Digital Humanities and Computational Archives　　2020 – 2024

Laboratory for Experimental Museology, EPFL, Switzerland

Dissertation title: "EncodingActs: Modeling, Representing and Transmitting Embodied Knowledge in Traditional Martial Arts" | Nomination for EPFL Doctorate Award 2024/2025

Supervisor: Sarah Kenderdine

Committee: Clarisse Bardiot, Lik Hang Tsui, Frédéric Kaplan, Jérôme Baudry, Sarah Kenderdine

MSc in Computer Science　　2015 – 2017

School of Computer and Communication Sciences, EPFL, Switzerland

GPA: 5.4/6 | Thesis title: "Visualizing Personal Nutrition Intake and Emotions"; Supervisor: Pearl Pu

BEng in Digital Media Technology　　2010 – 2014

College of Computer Science and Technology, Zhejiang University, China

GPA: 3.8/4 | Thesis title: "Visualizing Topic Evolutions in Wikipedia"; Supervisor: Wei Chen

Exchange Student in Human-Computer Interaction　　2013 – 2014

Department of Computer and Systems Sciences, Stockholm University, Sweden

GPA: A (Scholarship Recipient); Exchange Coordinator: Preben Hansen

2. Research Experience

Doctoral Researcher　　2020 – present

Laboratory for Experimental Museology, EPFL; Supervisor: Prof Sarah Kenderdine

- Research fields: Digital Humanities, Computational Archives, Digital Museology, Intangible Heritage
- Key accomplishments
    - Advanced *Hong Kong Martial Arts Living Archive* [link] through computational analytics
    - Led the *Computational Interoperability for Intangible and Tangible Cultural Heritage* project [link]
    - Contributed to *Future Cinema Systems: Next-Generation Art Technology* [link]
    - Contributed to *Transforming Lingnan Martial Arts as a Movement and Performing Art through Digital Pedagogy, Interpretation and Performance* [link]

Visiting Researcher　　July – Dec 2022

Visualization Research Centre, Hong Kong Baptist University; Supervisor: Prof Jeffrey Shaw

- Research fields: Digital Archives, Digitization, Creative Media, Expanded Curation

Research Assistant　　Jan – July 2017

Human-Computer Interaction Group, EPFL; Supervisor: Dr Pearl Pu

- Research fields: Affective Data Visualization, Human-Computer Interaction

Research Assistant　　2013 – 2015

Visual Analytics and Intelligence Group, Zhejiang University; Supervisor: Prof Wei Chen

- Research fields: Information Visualization, Visual Analytics

3. Teaching and Supervision

Teaching Assistant & Lecturer & Mentor & Grader　　2021 – 2024

- DH-404 Cultural Data Sculpting (Spring 2021/2022/2023/2024), MSc in Digital Humanities, EPFL
- Cross-Media Data Visualization (2014/2015, pre-PhD), Zhejiang University　　2014 – 2015

Master's Semester Project Supervisor

- Master's project in Digital Humanities; Topic: Interactive interface　　Fall 2023/24
- Master's project in Computer Science; Topic: Knowledge graph　　Spring 2021/22
- Master's project in Computation and Mathematics; Topic: Machine(/Deep) learning　　Spring 2020/21
- Master's applied project mentor for CS-433 Machine Learning, EPFL　　Fall 2020/21

Guest Lectures

- "Ontology Approach to MoCap Archives", for *MetaTool Team* 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　　2022/2023
- "Visualizing Embodied Knowledge Systems", in *Cultural Data Sculpting*, postgraduate class at EPFL　　2021/2022

4. Academic Services

Peer Reviewer   2022 – present

Digital Scholarship in the Humanities, Cogent Social Sciences, International Journal of Heritage Studies, Heritage Science, Journal of Human-Computer Interaction, Multimedia Tools and Applications, International 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 Services

- **Program Committee,** The *2nd International Conference on AI-generated Content* (AIGC), Beijing, 21-22 Dec 2024
- **Session Chair,** *Digital Humanities Conference 2024,* Washington/Online, 6-10 Aug 2024
- **Session Chair,** *New Paradigms for Accessing and Curating Audiovisual Collections,* Lausanne, 28-29 Sep 2023
- **Coordinator,** *Beyond Search: Opening Up Audiovisual Content for Humanities Studies*, Lausanne, 25-26 Sep 2023
- **Coordinator & Fundraiser & Editor,** *PhD Seminar on Human Factors in Digital Humanities*, Lausanne, 2-3 Dec 2021

Professional Associations

- Member of Europeana Tech Community & Research Community, Europeana Network Association (2022 – present)
- Member of European Association for Digital Humanities (2023 – present)
- Member of AI4LAM - Artificial Intelligence for Libraries, Archives & Museums (2021 – present)
- Member of ACM - Association for Computing Machinery (2021 – present)

5. Awards and Grants

Nomination for EPFL Doctorate Award 2024/2025: an award to recognize doctoral work of exceptional quality.

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

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 for Collaborative Research on Science and Society 2021-2022 (~€60,000); **Lead Researcher**.

Swissuniversities Support Program for organising a national DH PhD Seminar (~€8,000); **Applicant & Coordinator**.

6. Publications

Refereed Journal Articles

Hou, Y.* & Kenderdine, S. (2024). "Ontology-based Knowledge Representation for Traditional Martial Arts". *Digital Scholarship in the Humanities* (SSCI|AHCI), 39(2), 575-592 **.**doi: 10.1093/llc/fqae005

Hou, Y.*, Seydou, F., & Kenderdine S. (2023). "Unlocking a multimodal archive of Southern Chinese martial arts through embodied cues". *Journal of Documentation* (SSCI), *Special Issue on AI for Cultural Heritage.* 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* (DOAJ), Vol 9, No. 27, 1-12. 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), No. 55, 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**. & Kenderdine, 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), No. 63, 1-27. doi: 10.1145/3606702

Xia, J.[1], **Hou, Y.**[1], 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

Refereed Conference Proceedings

Hou, Y. (2023). "Co-encoding embodied knowledge in Southern Chinese martial arts: a collaboration between computists, experts, and digital models". In *Digital Humanities 2023: Book of Abstracts*, 261-262. doi: 10.5281/zenodo.8107443

Hou, Y.*, Kenderdine S. (2022). "Encoding the Whole-of-Environment Knowledge for Intangible Cultural Heritage". In *AMPS Proceedings Series, 29.1 - (IN)TANGIBLE HERITAGE(S): Design, culture and technology*, 121-132.

Adamou, A.*, **Hou, Y.***, Picca, D.*, et al. (2021). "Ontology-mediated cultural contact in Southern Chinese martial arts". In *Proceedings of the International Joint Workshop on Semantic Web and Ontology Design for Cultural Heritage*, 1-6. 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". In *Digital Humanities 2022: Book of Abstracts*, 329-332.

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), 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". Chapter in *Chinese Archery Studies: Theoretical and Historical Approaches to a Martial Discipline*, 249-278. Springer. doi: 10.1007/978-981-16-8321-3_13

Hou, Y. (2024). "Reliving martial arts classics in the digital era". In *Dushu,* issue 10, 22-27, Joint Publishing (H.K.).

Edited Volume

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

7. Conferences and Symposia

Keynotes

"Modelling, representing, and transmitting martial arts knowledge from digital archives" (forthcoming). Invited keynote speech for the *5th International Martial Studies Conference*, Aug 25 2024, Taipei.

"Building and Disrupting the Hong Kong Martial Arts Living Archive", Invited keynote lecture for the *Seminar on Digital Preservation of Cultural Heritage*, Jan 5 2024, Renmin University of China, Beijing/online.

"Towards Digital Preservation of Traditional Chinese Martial Arts". Invited keynote speech for the *4th International Martial Studies Conference*, Nov 30 2022, South China Normal University, Guangzhou/online.

Additional Oral Contributions to Conferences

"Archiving, Modelling and Representing Knowledge in Southern Chinese Martial Arts" (forthcoming). Accepted presentation at *Charting the European D-SEA: Digital Scholarship in East Asian Studies* Conference, July 11-12, 2024, Berlin.

"LAbrowser: Crafting an interactive interface for exploring a martial arts living archive" (forthcoming). Accepted presentation at the *ADHO Digital Humanities Conference 2024: Reinvention & Responsibility*, Aug 6-10 2024, Washington, DC.

"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.

"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.

"Augmenting embodied knowledge archives", presentation at *CHI Seminar on Extended Reality*, 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.

"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.

8. Selected Exhibitions, Installations, and Creative Works

Completed Collaborative Exhibitions and Performance Projects

嶺南武術之數碼藝術及教育試驗計劃 (Transforming Lingnan Martial Arts as a Movement and Performing Art through Digital Pedagogy, Interpretation and Performance), 2021-2023. **Collaborating Researcher**. In collaboration with the Institute of Chinese Martial Studies, Hong Kong Dance Company, martial artists, amongst others. [website]

"诗 e 柯桥" 数字诗路文化体验馆 (Digital Experience Centre for Chinese Classical Poetry Culture, Keqiao edition), 2020-2021. **Co-curator**. In collaboration with _box Interaction Co. Ltd and Xinhua Zhiyun Technology Co. Ltd. [demo]

Harper's Bazaar Icons Party Shanghai, 2021. **Creation Team** for interactive installations, with _box Interaction Co. Ltd. [demo]

Completed Installations and Creative Works

Natural Origins of The Internet. Data Art, permanent installation at the 2050 Museum of Inspiration, Hangzhou. [demo]

ImmerScience. An immersive, interactive learning space created for Daning International School, Shanghai. [demo]

Mirror¡. Conceptual design of a virtual 3D space, disrupting exhibiting conventions in the augmented era. [blog]

AquA. A virtual aquarium designed for motivating knowledge sharing activities at Médecins Sans Frontières (MSF). [demo]

EmovDiary. A visual interactive data journal for reviewing personal nutrition intake and emotion flows. [demo]

MOOC Learning Flow. A visualization of online learning clickstream patterns with outcome prediction. [demo]

9. Industry Experience

Creative Tech Lead, _box Interaction, Hangzhou, China_   2019 – 2020
Responsibilities: Leading creative technologies, leveraging data visualization, media technologies, and cloud solutions to enhance interactivity, immersion, and engagement for exhibitions and museums.

Digital Strategist (part-time), *NewStyle Media Group, Beijing/Hangzhou, China*   2019 – 2020
Responsibilities: Providing strategic advisory and solution architecture on digital transformation, office automation, and data-driven business intelligence.

Technical Product Manager – Media Cloud, *Alibaba Cloud, Hangzhou, China*   2017 – 2019
Responsibilities: Product owner for Real-time Communication (RTC) and Live-streaming cloud media services; R&D project manager and Scrum Master for the RTC and Live-streaming SDKs; market research.

Digital Consumer Analyst EMEA, *Procter & Gamble, Geneva, Switzerland*   2016 – 2017
Responsibilities: Visualization and automation of business reporting pipelines; Prototyping automatic CRM (customer relationship management) email campaigns in Europe; organizing team events.

10. Language and Skills

Language: Mandarin (native), English (proficient), French (intermediate, B1/B2), Cantonese (elementary).

Knowledge Fields: Cultural Heritage, Digital Archives, Semantic Web, Machine Learning, User Experience (UX), Data Visualization, Visual Analytics, VR/AR/XR, Digital/Virtual Museum, Motion Capture, Cloud Solution, HCI

Programming: Python, JavaScript (D3.js, three.js, p5.js), SQL/Cypher, R, Java, processing, HTML/CSS, C++, etc.

Tools: UE4, Unity, Axure, Media Processing (DaVinci, Photoshop, Audition, AI, etc), Neo4j, Knime, MS Office, etc.

Others: Southern Chinese Martial Arts, Archery, Musical Keyboard, Jazz Drumming, Ballet, Yoga