

# Yumeng HOU

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## 1. Biography

Yumeng Hou is a PhD candidate in digital humanities and computational (cultural) archives at EPFL, Switzerland. She earned her MSc in Computer Science from EPFL in 2017 and a BEng in Digital Media Technology from Zhejiang University in 2014. Yumeng has research and industrial experience in computational humanities, digital museology, data visualization, cultural analytics, intangible heritage, HCI, and cloud-based solutions, with a track record of publications, installations, and commercial projects.

## 2. Education

<b>PhD in Digital Humanities</b>	Oct 2020 – July 2024
<i>Doctoral School of Digital Humanities, EPFL, Switzerland</i>	
Dissertation: “EncodingActs: Computational Curation of Embodied Knowledge Archives”	
Supervisor: Prof Sarah Kenderdine, Head of Laboratory for Experimental Museology and EPFL Pavilions	
<b>MSc in Computer Science</b>	2015 – 2017
<i>School of Computer and Communication Sciences, EPFL, Switzerland</i>	
GPA: 5.4/6   Thesis Project: “Visualizing Personal Nutrition Intake and Emotions”, Supervisor: Dr Pearl Pu	
Semester Projects: “MOOC Clickstream Visual Analytics”, Supervisor: Prof Pierre Dillenbourg and Dr Francisco Pinto;	
“APP Design and Development for a Smart Lunchbox”, Supervisor: Prof Denis Gillet and Dr Marc Laperrouza	
<b>BEng in Digital Media Technology</b>	2010 – 2014
<i>College of Computer Science and Technology, Zhejiang University, China</i>	
GPA: 3.8/4   Thesis Project: “Visualizing Topic Evolutions in Wikipedia”; Supervisor: Prof Wei Chen	
<b>Exchange Student</b> (Scholarship Recipient)	2010 – 2014
<i>Department of Computer and Systems Sciences, Stockholm University, Sweden</i>	
GPA: A   Exchange Coordinator: Prof Preben Hansen	

## 3. Research Experience

<b>Doctoral Researcher</b>	2020 – present
<i>Laboratory for Experimental Museology, EPFL; Supervisor: Prof Sarah Kenderdine</i>	
<b>Visiting Scholar</b>	July – Dec 2022
<i>Visualization Research Centre (VRC), Hong Kong Baptist University; Supervisor: Prof Jeffrey Shaw</i>	
<b>Research Assistant</b>	Jan – July 2017
<i>Human-Computer Interaction Group, EPFL; Supervisor: Dr Pearl Pu</i>	
<b>Research Assistant</b>	2013 – 2015
<i>Visual Analytics and Intelligence Group, Zhejiang University; Supervisor: Prof Wei Chen</i>	

## 4. Teaching and Supervising Experience

<b>Teaching Assistant &amp; Lecturer &amp; Project Mentor &amp; Grader</b>	2021 – 2023
<ul style="list-style-type: none"><li>DH-404 Cultural Data Sculpting (21/22,22/23,23/24; 48 students), MSc in Digital Humanities, EPFL</li></ul>	
<b>Master’s Semester Project Supervisor</b>	
<ul style="list-style-type: none"><li>12-credit project in Digital Humanities; Topic: Interactive interface</li><li>12-credit project in Computer Science; Topic: Knowledge graph</li><li>10-credit project in Computation and Mathematics; Topic: Machine(/Deep) learning</li></ul>	Fall 2023/24 Spring 2021/22 Fall 2021/22
<b>Applied Project Mentor &amp; Grader</b>	Spring 2021/22
<ul style="list-style-type: none"><li>CS-433 Machine Learning, EPFL</li></ul>	
<b>Guest Lectures</b>	
<ul style="list-style-type: none"><li>“Computational Museology”, in <i>Digital Art History</i>, University of Basel</li><li>“Computational Motion Archives”, in <i>Cultural Data Sculpting</i>, EPFL</li><li>“Visualizing Embodied Knowledge Systems”, in <i>Cultural Data Sculpting</i>, EPFL</li></ul>	Apr 8 2022 Mar 31 2022 May 20 2021
<b>Invited Keynotes</b>	
<ul style="list-style-type: none"><li>Keynote at <i>Seminar on Digital Preservation of Cultural Heritage</i>, Renmin University of China</li><li>Keynote at <i>The 4th International Martial Studies Conference</i>, South China Normal University</li></ul>	Jan 5 2024 Nov 30 2022
<b>Teaching Assistant (pre-PhD)</b>	2014 – 2015
<ul style="list-style-type: none"><li>Cross-Media Data Visualization (2014/2015), Zhejiang University</li></ul>	

## 5. Academic Services

<b>Peer Reviewer</b>	2022 – present
<i>Heritage Science, International Journal of Heritage Studies, Multimedia Tools and Applications, Digital Scholarship in the Humanities, Journal of Open Humanities Data, and Digital Humanities 2023</i>	
<b>PhD Student Representative, Doctoral School Committee Member</b>	2021 – 2023
<i>EPFL’s Doctoral School of Digital Humanities (EDDH)</i>	

## 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.\* & Kenderdine, S. (2024). “Ontology-based Knowledge Representation for Traditional Martial Arts”. *Digital Scholarship in the Humanities* (SSCI|AHCI). doi: [10.1093/llc/fgae005](https://doi.org/10.1093/llc/fgae005)

Hou, Y.\*, Seydou, F., & Kenderdine 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](https://doi.org/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. doi: [10.5334/johd.136](https://doi.org/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](https://doi.org/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. (2024). “Augmenting access to embodied knowledge archives: a computational framework”. *Digital Humanities Quarterly* (ESCI). Just accepted.

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](https://doi.org/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](https://doi.org/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. doi: [10.5281/zenodo.8107443](https://doi.org/10.5281/zenodo.8107443)

Hou, Y.\*, Kenderdine 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](https://doi.org/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. doi: [10.1007/978-981-16-8321-3\\_13](https://doi.org/10.1007/978-981-16-8321-3_13)

Hou, Y. (2024). “Reliving martial arts classics in the digital era”. *Dushu Magazine*, issue 10, Joint Publishing (H.K.). [preview]

### Edited Volume

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

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

"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.

"Building and Disrupting the Hong Kong Martial Arts Living Archive: from digital to computational". Invited talk at *the Seminar on Digital Preservation of Cultural Heritage*, Jan 5 2024, Renmin University of China, Beijing.

"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.

"Computational Archives and Museology+", in *Expert Lecture Series*, \_box Interaction Studio, Dec 5 2022, Hangzhou.

"Towards Digital Preservation of Traditional Chinese Martial Arts". Keynote speech at *The 4th International Martial Studies Conference*, Nov 30 2022, Guangzhou, China.

"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.

"Artificial Intelligence for Cultural Heritage and Computational Archives". Guest lecture in *Digital Art History: Current Trends and Experimental Applications*, University of Basel, April 8 2022.

"Computational Motion Archives", Guest lecture in *Cultural Data Sculpting*, EPFL, 31 March 2022.

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

"Visualizing Embodied Knowledge Systems", Guest lecture in *Cultural Data Sculpting*, EPFL, 20 May 2021.

"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.

"Dimscanner: A relation-based visual exploration approach towards data dimension inspection". Paper presentation at the *IEEE Conference on Visual Analytics Science and Technology (VAST)*, 23-28 October 2016.

"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. Professional Experience (Industry)

<b>Creative Tech Lead</b>	2019 – 2020
<i>_box Interaction, Hangzhou, China</i>	
<b>Digital Strategist</b> (part-time)	2019 – 2020
<i>NewStyle Media Group, Beijing/Hangzhou, China</i>	
<b>Technical Product Manager – Media Cloud Service PaaS, SaaS and SDK</b>	2017 – 2019
<i>Alibaba Cloud, Hangzhou, China</i>	
<b>Digital Consumer Analyst EMEA</b> (internship)	2016 – 2017
<i>Procter &amp; Gamble, Geneva, Switzerland</i>	
<b>Lead Software Engineer &amp; APP Designer</b> (part-time)	2015 – 2018
<i>HIBACHI (IoT x Entrepreneurship), Lausanne, Switzerland</i>	

## 10. Additional Exhibitions, Installations, and Creative Works

*Museum of Poetry Cultural Experience @Keqiao. Co-curator.* A digital, playful, and interactive museum. [demo]

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

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

*Mirrorj. Designer.* A design for the augmented era, transmitting exhibition experience to a 2D interface. [blog]

*Aqua. Designer.* A virtual aquarium motivating knowledge sharing. Médecins Sans Frontières (MSF), Geneva. [repo]

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

*SPARK. Designer.* An interactive stress management APP designed during the HCI course, EPFL. [demo]

## 11. 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. **Soft Skills:** Product Design and Management, Communication, Data-driven Mindset, Agile, Team Spirit, Empathy

**Others:** Traditional (Chinese/European) Martial Arts, Archery, Musical Keyboard, Jazz Drumming, Yoga