YUMENG HOU

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EDUCATION

Doctor of Philosophy in Digital Humanities   July 2024
École polytechnique fédérale de Lausanne (EPFL)   (Expected)
Thesis: "EncodingActs: Computational Curation of Embodied Knowledge in Southern Chinese
Martial Arts*", Supervisor*: Prof. Sarah Kenderdine
Keywords: digital museology, computational archival science, cultural AI, multimedia
analytics, data visualization, mixed reality, interactive interface, digital humanities

Master of Science in Computer Science   2015 – 2017
École polytechnique fédérale de Lausanne (EPFL)
Dissertation: "Visualizing Personal Nutrition Intake and Emotions", *Supervisor*: Dr. Pearl Pu

Bachelor of Engineering in Digital Media Technology   2010 – 2014
Zhejiang University
Dissertation: "Visualizing Topic Evolutions in Wikipedia", *Supervisor*: Prof. Wei Chen

Exchange Student in Computer and Systems Sciences   2013 – 2014
Stockholm University

RESEARCH EXPERIENCE

Doctoral Researcher in Digital Humanities   2020 – present
Laboratory for Experimental Museology (eM+), DHI, EPFL

Visiting Scholar   July – Dec 2022
Academy of Visual Arts, Hong Kong Baptist University

Research Assistant in Data Visualization   2013 – 2015
Visual Analytics and Intelligence Group, State Key Lab of CAD&CG, Zhejiang University

TEACHING EXPERIENCE

Lecturer, Teaching Assistant. *DH-404 Cultural Data Sculpting 2021/2022/2023*, EPFL	2021 – 2023
Guest Lecturer. *Digital Art History 2022, University of Basel*	Spring 2022
Supervision. Master's project on knowledge interface design, EPFL	Fall 2023
Supervision. Master's project on knowledge graph-based cultural analytics, EPFL	Fall 2021
Supervision. Master's project on deep learning for multimodal archives, EPFL	Spring 2021
Assistant Lecturer, Teaching Assistant. *Cross-Media Data Visualization (Zhejiang university)*	2014 – 2015

GRANTS & AWARDS

EPFL Doc.Mobility grant (2022), a continuation of SNFS's instrument funded by Swissuniversities and EPFL [link]
EPFL-UNIL's CROSS – Collaborative Research on Science and Society grant (2021) [link]
Europeana Network Association member grant for attending EuropeanaTech 2023
Finalist for the best paper award (Paul Fortier Prize) at Digital Humanities Conference 2023

ACADEMIC SERVICE

Peer Reviewer for *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*	2022 – present
PhD Student Representative & Committee, Doctoral School of Digital Humanities, EPFL	2021.01 – 2023.02
Seminar Organizer, *Swissuniversities* DH seminar, Dec 2-3, 2021, EPFL, Lausanne	2021.09 – 2021.12
President of the Students' Union, *College of Computer Science, Zhejiang University*	2012 – 2013

PROFESSIONAL EXPERIENCE

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

PROFESSIONAL MEMBERSHIP

Europeana Network Association (ENA), Member of EuropeanaTech & Research Communities	2022.03 – present
Association for Computing Machinery (ACM), Member	2021.10 – present
EPFL's Doctoral School of Digital Humanities Committee, Member	2021.01 – 2023.02
UNIL-EPFL dhCenter, Member	2020.10 – present

EXHIBITION &INSTALLATION & CREATION

Museum of Poetry Cultural Experience @Keqiao. A digital, playful, interactive, and immersive museum. [demo]

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

Natural Origins of The Internet. Data Art Installation. Museum of Inspiration (2050 博悟馆), Hangzhou. [repo]

Mirrorȷ. A design for the augmented (Covid) era, transmitting exhibition experience to a 2D interface. [blog]

AquA. A Virtual Aquarium Motivating Knowledge Sharing. Médecins Sans Frontières (MSF), Geneva. [repo]

MOOC Learning Flow. Interactive visualization of MOOC learners' learning path with outcome prediction. [site]

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

PUBLICATIONS

Publication in Scientific Journals

Hou, Y.* & Kenderdine, S. (in press) "Ontology-based Knowledge Representation for Traditional Martial Arts". *Digital Scholarship in the Humanities* (SSCI|AHCI). [preprint]

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

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

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). "可及、表达、共鸣: 数字馆藏策展的挑战与方法 [Accessing, Representing, and Transmitting Cultural Heritage through Digital Archives: challenges and opportunities]". *数字人文研究 [Digital Humanities Research]*, 4(1), 77-91. 人民大学出版. http://dhr.ruc.edu.cn/CN/Y2021/V1/I4/77

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). "Datafication: Towards digital transmission of the living heritage of Southern Chinese martial arts". *Proceedings of* the *Ninth Young Scholars' Forum in Chinese Studies,* Chinese University of Hong Kong, Sept 7-8 2023, Hong Kong.

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

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.

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: Book of Abstracts*. July 25-29 2022, Tokyo.

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

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* (CCF-A), 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. doi: 10.1007/978-981-16-8321-3_13

Hou, Y. (in press). "武學經典之數碼復「活」".《讀書雜誌》, 香港三聯書店.

OTHER TALKS & LECTURES & CONFERENCE PRESENTATIONS

"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.

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

"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". 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.

"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.

KNOWLEDGE & SKILLS

Domains: Machine Learning, User Experience, Mixed Reality (VR/AR/XR), Digital/Virtual Museum, 3D, Digitization, Cloud Computing Services, Data Visualization, Analytics, HCI, Intangible Heritage, Semantic Web, Motion Capture

Soft skills: Product Design and Management, Communication, Data-driven Mindset, Agile, Team Spirit, Empathy

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.

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