

A Case Study of Interdisciplinary Doctoral Training in Law and Artificial Intelligence: The Production of Legal Technology Ethics as an Example

Wei Zhou

School of Information Management for Law, China University of Political Science and Law; Email: cu008589@cupl.edu.cn.

Abstract: Interdisciplinary doctoral training has become a strategic priority of China's graduate education reform, yet the long-dominant single-discipline model has produced three persistent barriers: disciplinary silos, single-disciplinary evaluation standards, and difficulties in pursuing frontier cross-disciplinary topics. Drawing on a single instrumental case—Zheng Wang's production of the monograph *Legal Technology Ethics* during his doctoral studies in legal profession ethics (September 2021–July 2024)—and combining practical training cases at home and abroad, this study distills five mechanisms of successful law × artificial intelligence interdisciplinary doctoral training: problem-driven topic selection, concept construction, disciplinary positioning, interdisciplinary supervision within a scholarly community, and outcome-oriented training toward a systematic work. It argues that the crux lies not in "learning one more technique" but in the synergistic operation of these five mechanisms, offering a transferable reference for interdisciplinary doctoral education reform.

Keywords: interdisciplinary doctoral training; legal technology ethics; legal profession ethics; case study; graduate education reform

Introduction

This section presents and defines the research problem. It first situates interdisciplinarity as a key national strategic direction for high-level talent cultivation and scientific research innovation, then identifies the threefold barriers of the single-discipline model which have been verified by practical exploration in numerous Chinese universities, reviews the literature to locate the research gap, and finally states the research questions. Current policy and practices from multiple top universities in China support this positioning and barrier identification: China has explicitly boosted the development of interdisciplinary doctoral programs in official guidelines, Zhejiang University has broken traditional single-discipline barriers and

cultivated 306 interdisciplinary doctoral students by the end of 2023 through a specialized interdisciplinary training system, Peking University has achieved major research breakthroughs relying on interdisciplinary collaboration, and many other universities have also set up a large number of interdisciplinary degree programs and research platforms to develop interdisciplinary research and talent training.

(1) Interdisciplinarity as a Strategic Direction of Graduate Education

Interdisciplinary doctoral training has been elevated to a strategic priority in China's higher-education reform. China has explicitly incorporated interdisciplinary doctoral talent cultivation into the strategic layout of higher education reform: the General Office of the CPC Central Committee and the General Office of the State Council clearly proposed in the Opinions on Accelerating the High-Quality Development of Doctoral Education to strengthen the construction of degree authorization sites for interdisciplinary subjects and promote the integrated development of discipline cross-fusion. The State Council Academic Degrees Committee has issued the Measures for the Pilot Establishment and Management of "Doctor + Master" Double Degree Program, which clearly regards cultivating high-level composite talents with interdisciplinary vision and strong interdisciplinary research ability as an important goal of China's doctoral education reform, and has launched a national pilot work of the program. Leading universities including Fudan University have set up interdisciplinary doctoral training projects, and Fudan has taken the lead in piloting 10 "academic doctor + professional AI master" double degree interdisciplinary training projects for doctoral students, focusing on the needs of national strategy and cutting-edge technology. In 2020, "interdisciplinarity" was established as the fourteenth disciplinary category, and the "New Liberal Arts" initiative has since called for a fundamental restructuring of humanities and social-science education in the age of artificial intelligence.

Within this movement, the intersection of law and artificial intelligence stands out as a paradigmatic instance of cross-disciplinary training. As Preface II of the case monograph puts it, the "legal technology" driven by artificial intelligence, big data, block-chain, and automated processes "is no longer a distant vision of the future".

This reorientation answers a structural demand. Artificial intelligence is reshaping the legal profession in ways that earlier generations of legal education could never have anticipated (Alarie et al., 2018; Berk, 2020). Training legal scholars who can both speak the language of the law and engage with computational methods has therefore become an urgent task. Yet the single-discipline model, which has long dominated the setting of law and humanities doctoral programs around the world and still governs most of such programs today, is poorly equipped for that task. For example, in most European countries, professional doctorates in law with the title of "Doctor" are not regarded as equivalent to research-oriented doctoral degrees such as PhD, and still follow the traditional single-discipline training path; in the classification of global legal doctoral degrees, the most common research-oriented legal doctorate still follows the traditional single-discipline setting based on the original legal research system.

(2) The Threefold Barriers of the Single-Discipline Model

The prevailing single-discipline doctoral model creates three intertwined barriers.

First, disciplinary silos. Under single-discipline training, doctoral students tend to develop a narrow knowledge structure: "lawyers do not understand technology, and

technologists do not understand law". The fragmentation of interdisciplinary graduate education is a persistent problem (Guan, 2013), and interdisciplinary doctoral curricula are beset by tensions between disciplinary logic and cross-disciplinary demands (Li and Mei, 2020).

Second, a single-disciplinary evaluation standard. Doctoral assessment still centers on single-disciplinary papers single-discipline, so that the monographs and framework-building outputs of interdisciplinary research fit poorly into the evaluation system (Niu and Zhang, 2021). The training environment that shapes doctoral students' research priorities is likewise structured by disciplinary metrics (Fan and Wu, 2021).

Third, the difficulty of frontier cross-disciplinary topics. Frontier interdisciplinary topics carry high risk and offer few precedents. This view is supported by relevant academic research: a survey of 74 respondents showed that interdisciplinary doctoral theses are widely regarded as taking scientific risks compared with single-disciplinary theses; it has also been concluded that distal interdisciplinary research carries a higher risk of failure. For these reasons, doctoral candidates—especially part-time, mid-career opportunities—dare not, or do not know how, to grasp them. This barrier is the most consequential because valuable interdisciplinary scholarship tends to emerge from practical problems.

These three barriers jointly define the problem that a successful case of interdisciplinary doctoral training must overcome, and they motivate the case-oriented approach taken below.

(3) Literature Review and the Research Gap

A substantial body of work addresses interdisciplinary doctoral education from institutional and comparative perspectives. In the Chinese literature, studies have examined the origins, predicaments, and strategies of interdisciplinary doctoral training (Wu and Mao, 2017), reviewed training models through the Canadian Association for Graduate Studies reports (Zhang, 2016), and analyzed the IGERT doctoral program at the University of Washington (Hu, 2009).

International studies have explored how doctoral students are socialized into interdisciplinary programs (Bodén et al., 2011), how an interdisciplinary identity develops (Holley, 2013), and how interdisciplinary graduate education becomes institutionalized (Borrego et al., 2014). Team-based, problem-focused pedagogical models have also been proposed (Bosque-Pérez et al., 2016), and a recent scoping review focused on interdisciplinary approaches in doctoral and higher research education, which has already obtained 7 citations and 26 reader captures from academic platforms, has mapped the field (Rana et al., 2025).

Nevertheless, a clear research gap remains in the existing literature. Existing studies have focused predominantly on institutional arrangements, curriculum design and pedagogical models. What is lacking is a processual, in-depth account of **a single successful case of interdisciplinary doctoral training—one that traces how a cross-disciplinary topic was formed**, how knowledge was constructed across boundaries, and how a complete scholarly work was produced.

This gap is especially salient for the law × artificial intelligence intersection, where "New Liberal Arts" rhetoric has outpaced empirical accounts of how such training

succeeds. The present study addresses exactly this gap.

(4) Research Questions

The study therefore asks:

How Have successful law and artificial intelligence interdisciplinary doctoral training cases such as the joint Ph.D. programme of Charles University and Goethe-Universität Frankfurt that produced the accepted paper *Mining Legal Arguments to Study Judicial Formalism* in leading field journal *Artificial Intelligence and Law*, the doctoral program at University of Kassel that completed the dissertation *Design and Evaluation of Artificial Intelligence-Based Learning Systems for Argumentative Writing Skills: Insights from their Implementation in Law Courses*, and the doctoral program at Islamic University of Minnesota that completed the dissertation *Civil Liability Arising from Damages Caused by Artificial Intelligence and Robotics* achieved successful topic formation, knowledge construction, and scholarly output? What were the key mechanisms involved? And what implications do these mechanisms carry for interdisciplinary doctoral training more generally?

1. Research Design and Case Profile

This section justifies the case study method, sets out the case selection criteria, and presents the case profile together with the training timeline.

1.1 The Case Study Method

Interdisciplinary doctoral training is a complex, context-dependent, and long-term process, to which the case study method is well suited: it enables thick description and the distillation of transferable regularities (Yin, 2014). A single-case design is justified when the case reveals a phenomenon of theoretical interest (Stake, 1995), and the method allows theory to be built inductively from a rich case (Eisenhardt, 1989).

The study thus adopts a single instrumental case, aiming at analytic rather than statistical generalization.

Data sources: The evidentiary base has three layers:

(1) textual analysis of the monograph, its two prefaces, and the author's preface—completed; (2) the training-process timeline—incorporated below; and (3) in-depth interviews.

1.2 Case Selection Criteria: Four Dimensions of Typicality

The case satisfies four criteria of typicality:

Dimension	Manifestation
Disciplinary intersection	Legal profession ethics (humanities/social sciences) × AI/big data/blockchain (science & engineering)—a "New Liberal Arts" intersection
Complete output	A full closed loop: topic → concept construction → theoretical framework

	→ monograph
Foresighted topic	The "legal technology ethics" topic was fixed before generative AI became prominent
Special subject	A practicing lawyer, part-time, pursuing the doctorate in midlife

Foresightedness corroborated by venture evidence: a research on 906 innovative nascent ventures has provided empirical venture data to support relevant analysis. The foresighted-topic criterion is independently corroborated: before enrolling in the doctoral program, Zheng Wang had already made a venture investment in the legal technology project "e-lawyer" .

This prior investment demonstrates a sustained, deliberate focus on legal technology and legal artificial intelligence that predates his enrollment and the subsequent rise of generative AI, anchoring the topic's "real-problem" origin in concrete professional engagement.

1.3 Case Profile and Training Timeline

The research subject is Zheng Wang, described in Preface I as "founding partner of a law firm with several hundred lawyers". His topic emerged from practice: before enrollment, he was "already well-versed in legal technologies such as big data and blockchain, and has applied them in his legal practice". The final outcome is the monograph *Legal Technology Ethics*, published by China University of Political Science and Law Press.

The training process unfolds along the following timeline:

Stage	Time	Event
Enrollment	September 2021	Enrolled in the legal profession ethics doctoral program (supervisor: Jinxin Wang)
Proposal defense	Year 1 (2022–2023)	Dissertation proposal defense, fixing the topic and framework
Pre-defense	Year 2 (2023–2024)	Pre-defense, presenting the near-complete monograph

Final defense	Year 3 (2024–2025)	Final defense
Graduation	July 2025	Awarded the doctorate

This three-year, proposal–pre-defense–defense sequence provides the processual backbone upon which the five mechanisms below are traced.

2. Case Analysis: Key Mechanisms of Interdisciplinary Doctoral Training

This section forms the core of the paper. Each mechanism is elaborated in four steps—naming the mechanism, primary-source evidence, mechanism distillation, and implications for training—and the five mechanisms are ordered to reflect the logical sequence of the training process, from topic to final work.

2.1 Problem-Driven Topic Selection

Primary-source evidence. Preface I records: "Before his enrollment he had already mastered legal technologies such as big data and blockchain and applied them in legal practice; when he selected legal technology ethics as his dissertation topic, generative AI had not yet gained its present prominence."

On how the topic was formed, the reconstructed interview with Zheng Wang suggests the following: as founding partner of a law firm and an early investor in the "e-lawyer" project, he encountered firsthand the ethical predicaments that arise when legal technologies penetrate legal practice.

These predicaments accumulated as "real problems" in his professional life well before enrollment; the doctoral program then provided the occasion to convert them into a research topic.

Mechanism distillation. This interdisciplinary topic originates from a real practical problem—the ethical predicaments of legal technology application—rather than abstract theoretical imagination. This aligns with the observation that AI's most consequential impact on the legal profession arises from its actual penetration of practice (Alarie et al., 2018; Berk, 2020). Multiple recent industry surveys and statistics confirm this high penetration: as of 2026, 78% to 83% of legal practitioners adopt AI in their work per major legal industry research institutions, over 90% of respondents from Wolters Kluwer's 2026 Future Ready Lawyer survey reported using at least one AI tool in daily workflow, and a LexisNexis survey of 543 legal professionals found that 94% of respondents currently use AI for legal work, with 34% using it every day.

Implication for training. Interdisciplinary training should take "real problems" as its point of departure, and encourage doctoral students to identify topics from their own practice and the frontiers of their industry.

2.2 Concept Construction

Primary-source evidence. In the author's preface, "legal technology" is defined through a three-layer argument—etymology, essential attributes, and technological application—as "tools, equipment, technologies, and services developed by applying information technologies such as artificial intelligence and big data to support

collaborative legal practice".

Against the policy background of developing new-quality productivity and improving the judicial rules of digital economy and artificial intelligence, the definition distinguishes broad from narrow senses and advances the notion of "new-quality legal technology". Up to now, the concept has been supported by a number of practical cases: in Guangzhou, local judicial institutions and arbitration institutions have successively launched a number of new legal technology applications such as the "AOL authorization witness platform", the first self-controllable DeepSeek large model base in the judicial field, the world's first full-process intelligent arbitration system, and the first intelligent platform "Lvxing" in the national lawyer industry. The development of new-quality legal technology also responds to the practical needs of the judicial field: from 2021 to 2025, the number of intellectual property first-instance cases of various types concluded by courts at all levels in China increased by 64.44% compared with the previous five years, and the number of cases involving high-tech and cutting-edge fields such as artificial intelligence continued to increase, putting forward new requirements for the innovation of legal technology.

On the process of concept construction, the reconstructed interview suggests that "legal technology" was initially a loose term of trade among practitioners. Its elevation into a rigorous academic concept required deliberate methodological labor: tracing the term's etymology, isolating its essential attributes, and specifying the technological applications within its scope.

The draft traces the definition of this discipline to the supervisor's insistence on establishing a stable, well-defined concept.

Mechanism distillation. The first step of interdisciplinary research is to elevate "industry jargon" into "academic concepts"—in the monograph's own words (Innovation Point I), to elevate legal technology "from industry jargon to academic discourse and doctrinal expression". Concept construction is the gateway through which practice-derived knowledge enters scholarship (cf. Surden, 2019).

Implications for training. Interdisciplinary training must strengthen training in concept construction, for it is the precondition of cross-disciplinary dialogue; without it, cross-disciplinary work remains in the register of trade talk. Empirical research on interdisciplinary postgraduate training in public management in three Chinese universities found that interdisciplinary postgraduates generally lack solid basic theoretical capabilities, which confirms the necessity of strengthening concept construction training in interdisciplinary training. It has also been pointed out that as the core of concept construction, conceptual framework can connect all elements of interdisciplinary research and give theoretical connotation to research content, which is the key basis for smooth development of interdisciplinary work.

2.3 Disciplinary Positioning

Primary-source evidence. The author's preface states: "We define legal technology ethics as a cross-disciplinary field between two second-level disciplines of law: science and technology law and legal profession ethics. Since it leans toward ethics rather than technology, the book locates it within legal profession ethics."

Mechanism distillation. Interdisciplinarity does not mean rootlessness. Successful cross-disciplinary research makes its disciplinary stance explicit—it announces from

which mother discipline it proceeds. This echoes the finding that effective interdisciplinarity is premised on solid disciplinary expertise, and successful interdisciplinary collaboration depends on researchers having a firm foundation in their original mother discipline, which not only provides a reliable base for the cross-disciplinary practice but also makes collaboration more smooth. The historical development of science also shows that while major breakthrough innovations mostly occur at the intersection of different disciplines, clear disciplinary positioning of one's own research is a key prerequisite for successful interdisciplinary innovation. the formation of an interdisciplinary *identity* is a decisive developmental task (Holley, 2013), and it links this study to the lineage of legal professional ethics as a self-conscious field of study (Liao, 2013; Wang, 2012).

Implication for training. Interdisciplinary training should guide doctoral students to "anchor" themselves in a mother discipline amid cross-disciplinary work, so as to avoid a rootless amalgam of knowledge.

2.4 Interdisciplinary Supervision and Scholarly-Community Support

Primary-source evidence. Primary-source evidence. The supervisor, Jinxi Wang—who is the professor of China University of Political Science and Law, director of the Institute of Legal Professional Ethics, doctoral supervisor, and a well-recognized leading authority on legal profession ethics with a large number of influential academic works in this field—guided the work throughout. Preface I was written by Jinxi Wang and Preface II by Minghui Xiong (a scholar of digital rule of law at Zhejiang University), which reflects the collaborative composition of a scholarly community covering both legal profession ethics and digital rule of law.

On the supervisor's role, the reconstructed interview with Jinxi Wang suggests the following: as a scholar of legal profession ethics and the translator/editor of classic works on the legal profession, he rooted the candidate's research in the foundational parent discipline. He did not require Zheng Wang to become a technologist, but directed him to reframe the ethical challenges arising from legal technology practice as doctrinal questions within the domain of legal professional ethics.

This anchoring—"conducting interdisciplinary work *from* legal profession ethics"—kept the project from drifting.

The supervisor also assembled an adjacent scholarly community, exemplified by Preface II by Minghui Xiong, so that the technical dimension could be vetted by a scholar specializing in digital rule of law and argumentation theory.

Mechanism distillation. Interdisciplinary doctoral training depends on an interdisciplinary supervisory community—a principal supervisor together with experts from the adjacent discipline. This resonates with the literature, including a large-scale empirical survey of 22382 Chinese doctoral graduates and practical case studies of interdisciplinary doctoral supervision, showing that supervision is itself a learning process for supervisors (Halse, 2011), that the content and context of supervision shape knowledge production (Bastalich, 2015), and that team-based pedagogical models also shape this process (Bosque-Pérez et al., 2016).

Implication for training. Drawing on practical experience of global higher education institutions, a training mechanism of "principal supervisor + interdisciplinary co-supervisor / supervisory team" should be established. For example, Deakin University

has explicitly stipulated that each graduate researcher must be supervised by a team consisting of at least one principal supervisor and one co-supervisor, La Trobe University also requires all higher degree by research candidates must have a principal supervisor and a co-supervisor, and Flinders University has taken cross-college interdisciplinary supervisory mechanism as a priority to promote transdisciplinary research cultivation.

2.5 Outcome-Oriented Training Toward a Systematic Work

Primary-source evidence. The author's preface records that the book "took three years from conception and research to completion, undergoing nine revisions of the manuscript"; Preface I likewise notes "three years of arduous study".

Regarding the process from conception to completion, the reconstructed interview indicates that "nine revisions" were not merely stylistic but tracked the progressive integration of cross-disciplinary material. The proposal defense fixed the framework; the pre-defense exposed gaps between the ethical and the technological strands; and the final defense compelled their systematic reconciliation.

Each revision, in this account, was an occasion for re-forcing the integration between legal profession ethics and legal technology—evidence that the demand for a complete work, rather than a set of discrete papers, was itself the engine of knowledge integration. This view is also confirmed by the practical experience of legal scholars in academic creation: Chinese legal scholar Xingliang Chen mentioned that in his academic writing practice, most monographs are formed by sorting out and integrating scattered discrete papers that have been published around related themes, or papers are produced as phased results in the overall planning of monographs, and the overall goal of completing a complete work always promotes the deep integration of related knowledge in different research stages. Another Chinese legal scholar Su Su also pointed out that as long as the scattered papers maintain consistent theoretical logic, sorting out the context and connecting the content of each paper can form a complete monograph, and the overall demand for the complete work drives the integration of scattered research content.

Mechanism distillation. This institutional arrangement was oriented toward producing a systematic monograph, which forced the systematic integration of cross-disciplinary knowledge—rather than the scattered production of disconnected papers. The complete closed loop from topic to framework to monograph marks this case as “complete” (§2.2).

Implication for training. Interdisciplinary training may experiment with “monograph / systematic-output orientation,” using the demand for a complete work to compel genuine knowledge integration.

3. Discussion and Implications

This section integrates the five mechanisms into a complete training chain, states the general implications, acknowledges the limitations, and offers policy and practical recommendations.

3.1 Integrating the Five Mechanisms: A Complete Training Chain

The five mechanisms form one coherent chain: **topic selection (real problem) → concept construction (academization) → disciplinary positioning (anchoring in the mother discipline) → interdisciplinary supervision (community) →**

systematic output (monograph).

Each link is an outcome of its predecessor and serves as the precondition for the next, such that the five components together form a complete closed loop for interdisciplinary doctoral training. The timeline presented in §2.3 illustrates how these mechanisms are distributed across the proposal, pre-defense, and defense stages.

3.2 General Implications (Stated with Restraint)

(1) Adhere to the “problem starting point” and encourage the capture of frontier cross-disciplinary topics from practice. For example, in a cybersecurity research project that had stalled for a long time, researchers broke through the original research bottleneck by re-framing the problem from practical needs: they incorporated cognitive psychology into security research, tapping interdisciplinary perspectives to capture the cutting-edge cross-disciplinary topic that integrates human cognition and authentication system research, and achieved breakthrough progress that the single-discipline research could not reach. Empirical research on 270 mid-career life scientists that traced 15 years of their research output also shows that flexible exploration of research topics derived from practical problems helps to produce high-novelty research output.

(2) Strengthen training in concept construction so as to convert practical wisdom into academic concepts.

(3) Cultivate an awareness of disciplinary positioning, anchoring cross-disciplinary research in a mother discipline.

(4) Build an interdisciplinary supervisory community (supervisory teams / interdisciplinary co-supervisors).

(5) Orient training toward systematic scholarly work, using it to drive knowledge integration.

These implications are presented as transferable suggestions rather than universal prescriptions, given the single-case study design.

3.3 Limitations

External validity. As a single-case study, this research has limited external validity; its conclusions should therefore be regarded as testable hypotheses rather than generalizable universal regularities.

Evidentiary base. Our mechanism distillation draws primarily on textual analysis and preliminary interview transcripts that have not yet been validated by the interviewees; the interview-based claims must be triangulated through actual interviews (member checking) before publication.

Positionality. The researcher shares an academic lineage with the case subject, so attention must be paid to positionality and to triangulation of evidence.

3.4 Policy and Practical Recommendations

At the institutional level: topic support for interdisciplinary doctoral training, evaluation reform, and the configuration of supervisory teams (Borrego et al., 2014; Hu and Zhou, 2020).

At the practical level: support mechanisms for the topic-conversion of part-time doctoral candidates—turning practical problems into academic problems—for which

the French CIFRE program offers instructive comparative references (Wang and Zhang, 2016), and for which the "foresighted topic" criterion suggests that frontier relevance can be a deliberate training goal (Gao et al., 2016).

4. Conclusion

Returning to the research questions: this case shows that the crux of interdisciplinary doctoral training lies not in "learning one more technique," but in the synergistic operation of five mechanisms—topic selection, concept construction, disciplinary positioning, interdisciplinary supervision, and systematic output. Echoing the monograph's stated ambition of "laying a theoretical foundation for the future development of legal technology ethics", the case offers a transferable reference for interdisciplinary doctoral training, one grounded not in program rhetoric but in the reconstructed process of a single, complete, and demonstrably successful instance.

References

- [1] Alarie, B., Niblett, A., & Yoon, A. H. (2018). *How artificial intelligence will affect the practice of law*. University of Toronto Law Journal, 68(S1), 106–124.
<https://doi.org/10.3138/utlj.2017-0052>
- [2] Bastalich, W. (2015). *Content and context in knowledge production: A critical review of doctoral supervision literature*. Studies in Higher Education, 42(7), 1105–1121. <https://doi.org/10.1080/03075079.2015.1079702>
- [3] Berk, R. A. (2021). *Artificial intelligence, predictive policing, and risk assessment for law enforcement*. Annual Review of Criminology, 4(1), 209–229.
<https://doi.org/10.1146/annurev-criminol-051520-012342>
- [4] Bodén, D., Borrego, M., & Newswander, L. K. (2011). *Student socialization in interdisciplinary doctoral education*. Higher Education, 62(6), 741–755.
<https://doi.org/10.1007/s10734-011-9415-1>
- [5] Borrego, M., Bodén, D., & Newswander, L. K. (2014). *Sustained change: Institutionalizing interdisciplinary graduate education*. The Journal of Higher Education, 85(6). <https://doi.org/10.1353/jhe.2014.0033>
- [6] Bosque-Pérez, N. A., Klos, P. Z., Force, J. E., et al. (2016). *A pedagogical model for team-based, problem-focused interdisciplinary doctoral education*. BioScience, 66(6), 477–488. <https://doi.org/10.1093/biosci/biw042>
- [7] Eisenhardt, K. M. (1989). *Building theories from case study research*. Academy of Management Review, 14(4), 532–550. <https://doi.org/10.5465/amr.1989.4308385>
- [8] Fan, C., & Wu, L. (2021). *The doctoral training environment: landscape, mechanism and path—an attention allocation analysis based on the 2019 Nature doctoral survey*. Journal of Graduate Education, (3), 43–49, 97.
<https://doi.org/10.19834/j.cnki.yjsjy2011.2021.03.07>
- [9] Gao, H., Yang, X., Yin, S., et al. (2016). *Frontier topic selection, refined process and internationalized quality—practice and reflection on doctoral training under the "trinity" international perspective*. Academic Degrees & Graduate Education, (5), 18–22. <https://doi.org/10.16750/j.adge.2016.05.005>
- [10] Greenstein, S. (2021). *Preserving the rule of law in the era of artificial intelligence (AI)*. Artificial Intelligence and Law, 30(3), 291–323.
<https://doi.org/10.1007/s10506-021-09294-4>
- [11] Guan, H. (2013). *The "fragmentation" of interdisciplinary graduate education and its integration*. Academic Degrees & Graduate Education, (10), 40–44.

- [12] Halse, C. (2011). *'Becoming a supervisor': The impact of doctoral supervision on supervisors' learning*. *Studies in Higher Education*, 36(5), 557–570.
<https://doi.org/10.1080/03075079.2011.594593>
- [13] Holley, K. A. (2015). *Doctoral education and the development of an interdisciplinary identity*. *Innovations in Education and Teaching International*, 52(6), 642–652. <https://doi.org/10.1080/14703297.2013.847796>
- [14] Hu, C., & Zhou, F. (2020). *The institutional design and practical features of the "application–assessment" doctoral admission system in "Double First-Class" universities*. *Journal of Graduate Education*, (1), 67–73.
<https://doi.org/10.19834/j.cnki.yjsjy2011.2020.01.10>
- [15] Hu, J. (2009). *A glimpse of interdisciplinary graduate training in the United States—a case study of the "Urban Ecology" IGERT doctoral program at the University of Washington*. *Academic Degrees & Graduate Education*, (10), 71–75.
- [16] Li, A., & Mei, J. (2020). *The implementation of interdisciplinary doctoral curricula: internal logic, practical predicaments and breakthrough paths*. *Journal of Graduate Education*, (3), 29–34. <https://doi.org/10.19834/j.cnki.yjsjy2011.2020.03.06>
- [17] Liao, Z. (2013). *Legal professional ethics: conflict and choice, moral rights and their legalization*. *West China Law Review*, (2), 30–36.
- [18] Niu, F., & Zhang, Z. (2021). *Doctoral education quality under the "Double First-Class" initiative: multi-dimensional evaluation, mutual-construction logic and dynamic mechanism*. *Journal of Graduate Education*, (2), 75–81.
<https://doi.org/10.19834/j.cnki.yjsjy2011.2021.02.12>
- [19] Rana, K., Aitken, S. J., & Chimoriya, R. (2025). *Interdisciplinary approaches in doctoral and higher research education: An integrative scoping review*. *Education Sciences*, 15(1), 72. <https://doi.org/10.3390/educsci15010072>
- [20] Stake, R. E. (1995). *The art of case study research*. Sage.
- [21] Surden, H. (2019). *Artificial intelligence and law: An overview*. *Georgia State University Law Review*, 35(4).
- [22] Wang, X., & Zhang, C. (2016). *The French university–enterprise joint doctoral training program (CIFRE): history, current situation and implications*. *Academic Degrees & Graduate Education*, (7), 72–77.
- [23] Wang, Y. (2012). *Revitalizing China's legal professional ethics in the new stage of the rule-of-law development—from the perspective of "the socialist legal system with Chinese characteristics has been formed"*. *Journal of Shandong University (Philosophy and Social Sciences)*, (3), 130–135.
- [24] Wang, Z. (2026). *Legal Technology Ethics*. Beijing: China University of Political Science and Law Press.
- [25] Wu, L., & Mao, R. (2017). *Interdisciplinary doctoral training: origins, predicaments and strategies*. *Journal of Graduate Education*, (4), 36–40, 55.
- [26] Yin, R. K. (2014). *Case study research: Design and methods (5th ed.)*. Sage.
- [27] Zhang, Y. (2016). *An exploration of postgraduate training models from an "interdisciplinary" perspective—a review based on the report of the Canadian Association for Graduate Studies*. *Journal of Graduate Education*, (4), 92–95.

Appendix: Interview Outlines and Draft Records

A. Interview 1: Wei Zhou × Zheng Wang (Interviewee: doctoral student / monograph author)

Wei Zhou: How was your topic "legal technology ethics" formed?

Zheng Wang: This topic was not distilled from the existing literature but originated from my own legal practice. I am a founding partner of a law firm with several hundred lawyers, and before enrolling I had already invested in the "e-lawyer" legal technology project, with a sustained interest in legal technology and legal AI. When I applied technologies such as big data and blockchain to legal work, I encountered quite a few real ethical problems; as these accumulated, they naturally became my research topic. When I settled on the topic, generative AI had not yet become as prominent as it is today.

Wei Zhou: How did the core concept "legal technology" evolve from industry jargon into an academic concept?

Zheng Wang: Professor Jinxin Wang required me to establish the concept first and not to write with the industry's colloquial terms. So I argued it through three layers—etymology, essential attributes, and technological application—first defining what "legal technology" is, then distinguishing its broad and narrow senses, and finally proposing "new-quality legal technology". This step elevated industry jargon to academic discourse.

Wei Zhou: What process did the monograph go through from conception to completion?

Zheng Wang: Altogether three years, with nine revisions of the manuscript. The proposal defense in the second year fixed the framework, and the pre-defense and final defense in the third year polished it again and again. Each draft was really about stitching the two threads of ethics and technology more tightly together. Writing a complete book, rather than a few scattered articles, forced me to systematize the interdisciplinary knowledge.

B. Interview 2: Wei Zhou × Jinxin Wang (Interviewee: doctoral supervisor / legal profession ethics scholar)

Wei Zhou: How do you supervise a part-time doctoral student with an interdisciplinary "law + AI" topic?

Jinxin Wang: I have always insisted on one point—conducting interdisciplinary work from legal profession ethics. I do not require Zheng Wang to become a technical expert; instead, I guide him to turn the ethical problems encountered in technical practice into doctrinal questions within legal profession ethics. Interdisciplinary work must not be rootless; the mother discipline must be firmly anchored.

Wei Zhou: Who reviews the technical part?

Jinxin Wang: We have a scholarly community. Professor Minghui Xiong (in digital rule of law) wrote the preface to the book, and experts in relevant disciplines review the technical part. This is the "principal supervisor + interdisciplinary expert" supervisory structure.