KELLEY SCHOOL OF BUSINESS

INDIANA UNIVERSITY

Doctoral Programs

Operations and Decision Technologies
Information Systems Major

The Ph.D. program in information systems prepares academic scholars focused on how business technologies are designed, developed, and used to enable and empower individuals, teams, processes, organizations, and society. Doctoral students work with faculty members who are experts in diverse research areas such as IT implementation, IT-enabled decision-making, IT systems design, information goods, healthcare IT, conversational AI, social media, collaborative work, usability, data analytics, recommendation systems, crowdsourcing/funding, cybersecurity, mental health informatics, and many other topics. Students have the advantage of a flexible program structure that enables them to take courses both inside and outside the department. Several recent graduates published research in top journals before they entered the job market.

Plan of Study

Completion of the Ph.D. with a major in IS takes from four to five years. The first two years are spent in coursework, including MBA-level courses (depending on the student's background) and doctoral-level courses in IS, data analysis, and research methods. Core IS courses offered in the department include foundations of IS research, individual-level research in IS, team collaboration, theory building, technical research in IS, and organizational-level research in IS. Special topics courses are offered in areas such as recommender systems, deep learning, and online social network analysis. These courses are augmented with tools courses in research methods, statistics, econometrics, and structural equation modeling. In addition, students take courses in a minor area of interest. Minors can include, but are not limited to, management, business economics, psychology, marketing, data science, and informatics.

For more information on the Information Systems major, contact:
Professor Antino Kim at antino@iu.edu

Primary Doctoral Faculty

Hillol Bala, Conrad Prebys Professor of Information Systems; Ph.D., University of Arkansas, 2008. Research interests: digitalization (e.g., AI, digital platforms, and modern enterprise systems) in organizations and society, including healthcare contexts; IT-enabled organizational change; IT use, adaptation, and impact.

A. Benedikt Brendel, Assistant Professor; Dr., University of Goettingen, 2017. Research interests: customer service failure and recovery, humanlike AI interfaces (e.g., chatbots), and affective reactions to AI (e.g., fear).

Nick Brown, Assistant Professor; Ph.D., Virginia Tech, 2023. Research interests: Information privacy, information security, and market manipulations (e.g., dark patterns, misinformation)

Alan Dennis, Professor of Information Systems and John T. Chambers Chair of Internet Systems; Ph.D., University of Arizona, 1991. Research interests: conversation
al AI (chatbots and digital humans), fake news on social media, and collaboration technologies.

Fujie Jin, Associate Professor; Ph.D., University of Pennsylvania, 2016. Research interests: impact of IT on organizations, digital economy, social media and crowdfunding.

Rain Kan, Assistant Professor; Ph.D., University of Washington, 2024. Research interests: digital transformation, human-AI interactions, online inclusivity.

Antino Kim, Associate Professor; Ph.D., University of Washington, 2016. Research interests: human-AI interactions, misinformation and social media, digital piracy, markets for information goods.

Jorge Mejia, Associate Professor; Ph.D., University of Maryland, 2016. Research interests: antecedents and impacts of social media and success in early-stage tech entrepreneurship.

Sagar Samtani, Associate Professor; Ph.D., University of Arizona, 2018. Research interests: artificial intelligence, cybersecurity, cyber threat intelligence, deep learning, large language models, vulnerability management, Internet of Things, Dark Web analytics, mobile health analytics, mental health, business intelligence, semiconductors.

Ankit Shah, Assistant Professor; Ph.D., George Mason University, 2019. Research interests: artificial intelligence for cybersecurity, resilient network architectures, optimal security policy design, vulnerability management optimization, adversarial machine learning, deep reinforcement learning, computer vision, combinatorial optimization.

Siddhartha Sharma, Assistant Professor; Ph.D., Carnegie Mellon University, 2020. Research interests: strategies and implications of digital platforms.

Ramesh Venkataraman, Professor of Information Systems and John R. Gibbs Professor; Ph.D., University of Arizona, 1995. Research interests: data modeling, heterogeneous databases, virtual teams and groupware, usability in mobile systems, software engineering, and database design.

Brad Wheeler, Sungkyunkwan Professor and IU James H. Rudy Professor; Ph.D., Indiana University, 1993. Research interests: Applied cybersecurity, CIO executive leadership, executive leadership of IT strategy, executive programs in business-IT effectiveness, net-enabled organizations, open-source software.

Lucy Yan, Professor and John & Esther Reese Professor; Ph.D., University of Washington, 2012. Research interests: social networks and large-scale data analysis, social media in healthcare, business analytics and data-driven decision making, economics of IS, mobile/internet marketing.

Jingjing Zhang, Professor of Information Systems and Judith Norman Davis and Kim G. Davis Professor of Business Analytics; Ph.D., University of Minnesota, 2012. Research interests: personalization and recommender systems, knowledge discovery and data mining, human-AI interactions.

Sample of Past Student Placements

University of Arizona (Agrim Sachdeva, 2024)
University of Georgia (Akshat Lakhiwal, 2023)
University of Warwick (Seyoung Seol, 2021)
University of Delaware (Xiaoye Cheng, 2020)
University of Texas, Austin (Patricia Moravec, 2019)
University of Oklahoma (Xuan Feng, 2019)
California State University, Fullerton (Jordan Barlow, 2015)
Iowa State University (Lingyao (Ivy) Yuan, 2015)
Northern Illinois University (Akshay Bhagwatwar, 2015; now at Amazon)
University of Hawaii (Randall Minas, 2014)
Western University – Ivey Business School (Binny Samuel, 2012; now at University of Cincinnati)
Brigham Young University (Taylor Wells, 2011)
Brigham Young University, Hawaii (Aaron Curtis, 2009)
University of Michigan (Lionel Robert Jr., 2006)
Washington State University (Paul Clay, 2006)
University of Nebraska (Kerry Ward, 2005)

Ranking Information

The IS faculty is ranked as the 7th most research-productive department in the US over the past five years. (Reference: https://www.aisresearchrankings.org/)

View Kelley's other rankings here: https://kelley.iu.edu/about/rankings.html

Other Resources

- FAQ from Kelley School of Business Doctoral Program Office: https://kelley.iu.edu/programs/phd/admissions/frequently-asked-questions/index.html
- FAQ from Operations & Decision Technologies Department: https://kelley.iu.edu/faculty-research/departments/operations-decision-technologies/phd/frequently-asked-questions/index.html
- How to apply: https://kelley.iu.edu/programs/phd/admissions/how-apply/index.html

For more information on the Information Systems Major at the Kelley School of Business Doctoral Program, see: https://kelley.iu.edu/faculty-research/departments/operations-decision-technologies/phd/information-systems.html

General Information

- What jobs do PhDs in IS get?
  - Business school professor
  - Industry researcher (e.g., Amazon, Google, Microsoft, …)

- Program overview

Years	Activities
1 – 2	Coursework Research assistant for faculty Summer papers Qualifying exam
3 – 4	Dissertation research Teach 2 full-semester courses Defend dissertation proposal
4 – 5	Job market Final dissertation defense

Note: Students are expected to graduate in 4-5 years, and the timeline would depend on each student's plans, research progress, and the specific field of research he/she is in. Students should consult their (potential) dissertation committee chair as soon as possible.

- Coursework
  - Major: 18 credits
  - Minor: 9–12 credits
    - Tailor your Minor to highlight your individualized interests
  - Methods & Analysis: 12 credits
  - Teaching Development: 1.5 credits
  - Work with a faculty member to find the best courses for your research interests

- Research environment
  - Regular internal and external seminars within departments and across the school
  - Research groups, labs, and centers in the department:
    - Data Science and AI Lab
    - Responsible AI Research Group
    - Institute for Digital Enterprise
    - Institute for the Business Analytics
    - Grant Thornton Institute for Data Exploration for Risk Assessment and Management

- Student background
  - Undergraduate degree in diverse fields, including (but not limited to) economics, computer science, engineering, math, physics, psychology, and business
  - Master's degree: Not required, although quite common
  - Some research background is very beneficial but not required

- Financial support
  - Full tuition remission
  - Stipend and fellowships
  - Health insurance
  - Support for research and travel