Lucy Family Institute for Data & Society

Accelerating Industry Impact using AI and Data Science

With the support of University partners, the **Lucy Family Institute for Data & Society** builds bridges with local banking and manufacturing companies to develop AI solutions that accelerate industry success and enhance the quality of living in our communities.

Fostering local civic innovation

Advancing health access & outcomes

Addressing global barriers

Research Labs

Data Scientists

Education

AI & Data Science

Data Platforms

Accelerating industry

Translating AI for science & society

Responsible. Inclusive. Safe. Ethical.

Our strategy

1. Enable sustainable collaboration and co-engagement between academics and businesses in the region, in Indiana and globally through work with our partners at iNDustry Labs and AnalytiXIN.

2. Identify and capitalize on opportunities for applied research that has a data & analytics component

3. Pilot proof-of-concepts that increase company efficiency and drive growth, using emerging technologies and sophisticated analytical approaches

4. Accelerate companies to the next level of self-sufficiency through targeted projects to enable increased, material organic growth

5. Support companies with research development projects that enhance the region as a designated, prosperous and enjoyable place to live

6. Design workforce development projects to strengthen the stability, safety and quality of local industries

By the numbers

Over
13
Industry Engagements

4
Multi-Semester Internship Co-ops

60
Community Partners

5
Company Internship Opportunities

Research *spotlight*

The RAISEuP Program: 1st Source Bank | The RAISEuP (Research and Industry Scholarly Exchange Fellowship Program) is an upskilling program designed to encourage investments in data analytics that can identify untapped opportunities for market growth.

Participants from regional industries co-locate with members of the Institute's Applied Analytics and Emerging Technology Lab (AETL), to address challenges from the industry that align with the mission of the Institute. Fellows with the RAISEuP program have included participants from 1st Source Bank, who work alongside Institute data scientists to train in the use of data science methodologies. Additionally, RAISEuP Fellows support AETL's experiential learning program - an opportunity for university students to develop machine learning frameworks for real-world industry partners.

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Learn more at lucyinstitute.nd.edu

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Areas of research

Decision support
The Institute develops domain-specific large language models (LLMs) that improve industry efficiency, allow businesses to focus on high-value tasks, and help prioritize opportunities based on financial, sector, and cultural factors.

Workforce safety
By leveraging the power of virtual reality, Institute researchers work with industry leaders and other Indiana universities to design enhanced virtual safety training environments that reduce workplace injuries.

Manufacturing optimization
The Institute creates tools to improve and validate production plans by factoring in time, equipment, and inventory costs, enabling future opportunities across the value chain including robotics optimization, predictive maintenance, process control, and waste reduction.

Workforce upskilling
The Institute invites regional industries to participate in upskilling programs that train professionals in data science methodologies, work to address industry-specific challenges and produce meaningful innovations to advance society.

Internet of Things (IoT) and marketing
Engineers at the Institute's AETL help equipment manufacturers test approaches to improving owner experiences and boost brand loyalty by influencing consumer behavior through multi-year decision journey projects across industries.

Research *spotlights*

VR Training: Lacey Diversified Industries | A collaboration with Purdue University and Indiana University is improving workplace safety with virtual reality (VR). The VR Training Program for Lacey Diversified Industries simulates high-risk parts of the manufacturing process. It features specific scenarios that enable operators to have increased safety training with less risk, less material waste, and easier repeatability.

Applied Research: Southwire Strategic Partnership | The Institute's AETL and iNDustry Labs are working with companies like Southwire to improve performance measures and enable the production of millions more feet of wire. These collaborations go beyond consulting, driving change through applied research, joint grants, and recruiting opportunities.

Research *powered* by:

The Institute's research is powered by the collaborative nexus of specialized labs:

- The Applied Analytics and Emerging Technology Lab (AETL)
- The Artificial Intelligence Trust and Reliability (AITAR) Lab
- The Data, Inference, Analytics, and Learning (DIAL) Lab
- The Civic-Geospatial Analysis and Learning Lab (C-GALL)
- The Health Data and Analytics Lab (HDAL)
- The Human-Centered Responsible Artificial Intelligence (HRAI) Lab

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