Identifying IU's Community Engaged Research Efforts with AI Neural Networks

Jeremy F Price, PhD · IUI School of Education

The Opportunity

The significant expansion of **community-engaged research and public scholarship** is included in the Transformative Research pillar of the IU 2030 Strategic Plan at all levels from the IU system to individual campuses. Long a decentralized endeavor carried out through a network of highly dedicated faculty, staff, and administrators, there are records of partnerships and projects in a dispersed range of data sources, from the Collaboratory, DMAI entries, IU News press releases, campus-based ScholarWorks repositories, published scholarship, and project, lab, center, and individual faculty and staff member webpages.

The inclusion of expanding community engaged and public scholarship in IU 2030 as a set of ***measurable objectives*** requires **all efforts be *identified* and *tracked***, a time-intensive effort prone to noise[1].

The Response

To fulfill the requirements of the IU 2030 Strategic Plan, it is necessary to build a comprehensive process for identifying and tracking current and future community engaged research and public scholarship efforts across a range of data sources in a timely fashion while minimizing the impact of noise.

With three Data Science graduate students provided through the Faculty Assistance in Data Science program during summer 2024, I will build an **AI neural network to identify community engaged research and public scholarship efforts**. Some similar efforts have been initiated with respect to identifying and classifying community engaged research efforts, such as part of Virginia Commonwealth University's Carnegie Community Engaged Campus reauthorization process (Ferrell, 2023; Ferrell et al., 2022).

Tentatively named CEnTR*SEEK[2], the project will draw on principles of deep machine learning to **detect community engaged research efforts from IU News press releases published online between January 1, 2020, and June 30, 2024**. The timeframe encompasses the stay-at-home and social recovery phases of COVID-19, increasing the likelihood of finding community engaged research efforts in press releases.

IU News releases known to represent community engaged projects and IUI TRIP Scholar of the Month announcements will be used as training data for the neural network. These two data sources are written in a similar style and will provide for a relatively straightforward transfer for the neural network. Complexity is added when attempting to transfer categorization schemas to data sources that are drastically different than the training data (such as ScholarWorks items and published scholarship). This initial pilot (May 7-July 26, 2024) phase will retain a like-to-like context given the short time frame.

Future Trajectories and Ultimate Outcomes

After summer 2024, I look forward to extending this innovative work essential to IU's strategic plan in several ways:

- **Map the contours of community engaged research**. Through a consensus-building process with community engaged scholars at IU, I look forward to defining the contours and boundaries of community engaged research to make the identification process more accurate and more efficient.
- **Expand the contexts in which CEnTR*SEEK operates.** I will broaden the training material to include ScholarWorks items, published articles, IU webpages, etc., so CEnTR*SEEK can operate in these contexts.
- **Automated identification of community engaged research metadata.** With the further assistance of students, I will help CEnTR*SEEK identify important metadata, such as *partners*, *products*, and *outcomes*.
- **Classification of community engaged research efforts.** CEnTR*SEEK will further be trained to classify efforts in several ways, such as by *type* of community engaged research; *sector* of impact (e.g., Health and Nutrition, Education and Social Services, Governance, Policy and Law, Environment and Climate Change, etc.); *locus* of effort; and *scope* of impact (local, regional, statewide, national, international, etc.).

The ultimate goal is to develop and sustain a ***social network knowledge graph*** (Dörpinghaus et al., 2022; Lee et al., 2019) of IU's community engaged research and public scholarship efforts. This highly flexible database structure allows for fully tracking and evaluating relationships and projects while providing straightforward ways to identify *structural holes* (Daly & Finnigan, 2010) and prioritize areas of growth for IU's community engaged research efforts.

---

[1] *Noise* as defined by Kahneman et al. (2021) refers to *natural variability in human judgment*, a factor likely to arise in this case due to the inconsistent definitions of community engaged research and the immense trail of a wide range of artifacts that represent community engaged research.

[2] *CEnTR*SEEK* stands for ***C**ommunity **E**ngaged and **T**ransformational **R**esearch **S**ystem for **E**xtracting **E**ngaged **K**nowledge.