

Human-Centered AI for Augmented Development of ad hoc Information Structures

Graduate Thesis Proposal

Thurston Sexton

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**National Institute of
Standards and Technology**

U.S. Department of Commerce

Thurston Sexton — (734.12) Information Modeling & Testing Group

Research

- **Domain-Informed ML** (Hybrid Models, NLP, Network Analysis)
- **Human-Systems Integration** (human-centered AI, IA, interfaces)
- **Analysis Reproducibility** (AI ethics, transparency, workflows, tooling)

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Involvement

- Knowledge Extraction & Applications Project (PI)
- EL Diversity, Inclusivity, & Belonging Council
- AI Community of Interest (EL rep., ai-catalog maintainer)
- Other collaborations (731 CR, 732 EIBP, 775 CORD19)

Expertise in the AI/ML space is so often tied to *implementation within our domain*. Perfect to encourage a culture of bundling case studies (data+code) and *sharing* them.

- What “roles” are available to champion DataOps within teams? (Information Maintainers?)
- Reducing pain points (e.g. in data flows, server security, project management) with user-studies... what tasks are we “needing to do” and how can we amortize the cost?
- Build a community culture around documenting and sharing our solutions to save time and preserve institutional know-how.

Questions?

Resources

DataOps

- Richard McElreath's talk on Reproducibility in the Sciences, [Science as Amateur Software Development](#)
- Comparing data version control tools: [blogpost](#)
- Git for Science ([PlosONE](#) paper and [repository](#))

Documentation

- Example: AI-Col's new web-based [Catalog of AI Projects](#) @NIST, and the [gitlab repository](#) we make it with
- Authoring scholarly papers with modern tools: [Manubot](#)
- Turn Jupyter notebooks into beautiful websites and documents: [Jupyter Book](#) (then, host them easily on GitLab)
- *This presentation is a [gitlab repository](#)!* I took care of NIST logo compliance so you don't have to :)

References