Metadata Application Profile

"HCI Capstone Inspiration /depot"
HCI/d Capstone Collection

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Digital Libraries, Fall 2024

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1. Title:
"**HCI Capstone Inspiration /depot**" : HCI/d Capstone Collection

2. Application Scenario for the HCI/d Capstone Collection:

- **Context:** The HCI/d Capstone Collection is a digital library showcasing past capstone projects completed by second-year graduate students in the [Human-Computer Interaction/design (HCI/d)](#) program at the [Luddy School of Informatics, Computing, and Engineering](#) at [Indiana University Bloomington](#). These projects are part of the I695 HCI/d Capstone Thesis course, which students take during their final semester. Currently, there is no centralized archive for these projects, and this collection aims to fill that gap by providing easy access to digitized versions of posters, project documentation, and design prototypes.

- **Content:** The collection contains a variety of materials such as:

  - **Posters**: Digitized versions of physical posters from past capstone projects. Most posters will be digitized in PNG format to ensure high-quality representation, especially for text-heavy and graphic-intensive content. However, recent posters may be shared directly by students in PDF or JPG formats.

  - **Project Documentation**: Detailed reports, design prototypes, and research findings (when available) in PDF format.

  - **Other Project Artifacts**: Video demonstrations or supplementary materials from recent capstone projects, provided as external links.

  Most of the project resources are shared by students in JPG and PDF formats with copyright permissions. Additionally, some physical materials, currently stored in the HCI/d Studio in Myles Brand Hall, will be digitized after obtaining permission from the students who created them. These materials will be made available for online browsing and searching as part of the collection.

- **Users:** The primary audience for this collection includes:

  - **First-year HCI/d students**: This resource will assist students as they begin planning their own capstone projects by providing inspiration and insights into what has been done before.

  - **Faculty members**: Advisors who mentor HCI/d students can use the collection to refer to past work as examples for guidance.

  - **Prospective students**: Those interested in the HCI/d program can explore the collection to understand the scope of work undertaken by current and former students.

  - **Researchers**: Individuals studying trends or developments in HCI can use the collection as a source for research on capstone project topics and methodologies.

3. Metadata Properties: Descriptions and Definitions

Here's a list of all metadata properties with descriptions for this digital collection:

1. **objectid:** A unique identifier assigned to each capstone in the collection. You can think of this as the unique capstone project ID. This should follow the format capstone_[YYYY]_[STUDENT'S NAME] (e.g., capstone_2024_mike_wazowski).

2. **parentid:** The ID of the parent object if the item is part of a larger set (e.g., if the capstone project has multiple items).

3. **filename:** The name of the capstone poster file associated with the project (PDF, image, etc). It's used as a key identifier and ensures a seamless and predictable connection between the metadata and the file, wherever it's hosted.

4. **format:** The MIME type of the capstone poster file, used to determine the type of media (e.g., image/jpeg, application/pdf).

5. **title:** The name of the capstone project.

6. **creator:** The name(s) of the students who completed the project. This can usually be found at the bottom of the capstone poster.

7. **description:** A brief description of the project, summarizing its purpose, outcomes, and key elements. This can usually be found next to the project title on the capstone poster.

8. **course**: The course during which the project was completed (e.g., I695 HCI/d Capstone). This can usually be found at the bottom of the capstone poster.

9. **date:** The date is used to show the year during which the capstone project was completed. This can usually be found at the bottom of the capstone poster.

10. **term:** The term is used to reflect the semester(s) during which the capstone project was completed. It will either be Fall or Spring. This can usually be found at the bottom of the capstone poster.

11. **capstone_advisors:** The faculty member(s) who advised the project. This can usually be found at the bottom of the capstone poster.

12. **associate_instructors**: The associate instructor(s) involved in the project. This can usually be found at the bottom of the capstone poster, if available.

13. **documentation:** A digital copy of the final project documentation or report, associated with the capstone project.

14. **prototype_link:** A link to the digital prototype or demonstration of the project (e.g., hosted on an external platform). These links can be hosted on any platform, such as Youtube, Vimeo, Dropbox, or other external platforms.

15. **project_type:** It specifies the methodology or primary approach used in each capstone project.

16. **project_theme:** The overarching theme or focus of the project, such as "Accessibility," "AI," or "UX Design."

17. **industry_application:** The industry or sector in which the project's outcomes could be applied (e.g., "Healthcare", "Education", "Entertainment").

18. **user_groups:** The intended user group for the project, such as "Children," "People with Disabilities," or "Students."

19. **degree_book:** This refers to the graduate capstone degree book, which used to be published and contained summarized versions of all capstone projects from students in the graduating year. So far, these have been found in the HCI/d studio for the years 2017, 2018, and 2019.

20. **source:** The source collection or organization from which the project is derived, mainly "Luddy School of Informatics, Computing, and Engineering."

21. **subject:** This field is for adding keywords that may not fit into predefined categories. These keywords will enhance search and filtering, as well as generate word clouds to visualize topic frequency within the collection.

22. **language**: The language(s) in which the project or its materials are presented. This will mostly be in English but still should be recorded in case there's a project presented in a different language.

23. **rights:** The copyright status or permissions for the project. This field will primarily consist of free-text descriptions that detail the ownership of the project materials, such as whether the student retains full copyright or if any specific permissions have been granted for use.

24. **rightsstatement:** A URI-based standardized rights statement that clarifies the usage rights for the project. Refer to: https://rightsstatements.org/page/1.0/?language=en

25. **display_template:** Specifies how the item's content is visually displayed on the collection site.

26. **object_location:** Path or URL to the full-sized digital object of capstone poster.

27. **identifier:** A unique value used to distinguish this item in the collection.

28. **image_small:** Path or URL to a small-sized image representing the capstone poster on its page.

29. **image_thumb:** Path or URL to a thumbnail image used in visualizations like galleries or cards.

30. **Image_alt_text:** Some descriptive text providing context for the capstone poster, to enhance accessibility.

4. Functional Requirements:

The metadata scheme and retrieval system must allow users to:

1. **Browse by:**
   a. Project:
      i. title
      ii. project_type
      iii. project_theme
      iv. industry_application
      v. user_groups

   b. Course:
      i. date
      ii. capstone_advisors
      iii. associate_instructors
      iv. degree_book

2. **Search by:**
   a. title
   b. creator
   c. capstone_advisors
   d. associate_instructors
   e. date
   f. term
   g. project_type
   h. project_theme
   i. industry_application
   j. user_groups
   k. subject
   l. language

3. **Sort by:**
   a. title
   b. date
   c. project_type

4. **Group by:**
   a. date
   b. project_type
   c. project_theme
   d. industry_application
   e. user_groups

5. How To Use the Metadata Application Profile (MAP):

Each metadata field in the MAP is presented in a table below ([See Section § 6](#)). Columns indicate the following:

1. **Element Name:** The name of the metadata field in the MAP.

2. **Dublin Core Mapping:** The corresponding Dublin Core element that this field maps to.

3. **Obligation:** Indicates whether the field must be filled in or if it is optional.
   Possible Values:
   a. *Mandatory*: A value must be entered..
   b. *Required (if available)*: A value must be entered if available.
   c. *Optional*: A value is not required for this element.

4. **Cardinality:** Specifies how many values are allowed for the field.
   Possible Values:
   a. **1**: Only one value is permitted.
   b. **0..1**: Zero or one value allowed (optional).
   c. **1..n**: At least one value is required, with no upper limit.
   d. **0..n**: Any number of values, including none.

5. **Input Guidelines:** Rules for how to enter data into the field.

6. **Vocab/Syntax Schema:** Specifies the controlled vocabulary or syntax rules that should be applied to the values in the field.

7. **Examples:** Sample data entries illustrating how to properly fill in the field.

6. Metadata Application Profile (MAP):

Element Name	Dublin Core Mapping	Obligation	Cardinality	Input Guidelines	Vocab/Syntax Schema	Examples
objectid	Identifier	Mandatory	1	Use format: **capstone_[YYYY]_[XXXX]**, where YYYY is capstone project completion year and XXXX is the student's full name. Make sure to separate the names (first, middle and last) using underscores.		• capstone_2021_mike_wazowski • capstone_2024_james_p_sullivan • capstone_2025_akanksha
parentid	Relation	Optional	0..1	Include for objects w/in a compound object. Should appear as the objectid of the compound object in which it is contained.		• capstone_2021_mike_wazowski
filename	Identifier	Mandatory	1	This is the poster's file name. Must exactly match the actual filename of the file in the "objects" directory, including the case of the filename and file extension. (Quick tip: When adding new files, it's a good idea to rename the file and follow the format: **capstone_poster_[YYYY]_[XXXX].[FILE EXTENSION].** This will help keep the data consistent and organized on the backend).		• capstone_poster_2021_mike_wazowski.pdf • capstone_poster_2025_akanksha.jpg
format	Format	Mandatory	1	Use media types format on IANA to describe the capstone poster's file type: • For image: image/jpeg, image/png, image/svg+xml • For document: application/pdf • For video: video/mp4	IANA Media Types	• image/jpeg • image/png • image/svg+xml • application/pdf
title	Title	Mandatory	1	Enter the capstone project's title exactly as it appears on the poster, using the title case (capitalize the first letter of each major word). If the title includes special symbols (e.g., + or "" or ?), include them as they appear. If there are multiple projects with the same name, differentiate the new one by adding the year in brackets.		• What Makes the Elden Ring Great? • Scribble Pet • Give-a-crit • Enhancing • Music Producers • Scribble Pet (2024)
creator	Creator	Mandatory	1..n	Use this format to add student's name: **[FIRSTNAME] {[MIDDLE NAME]}] [LAST NAME].** Make sure write it in title case. If multiple student creators, separate by comma		• Hayao Miyazaki • Robert M. Smith • Joe Duplantier, Mario Duplantier • Akanksha

				(,). If a student has a single name, just write that name.		
description	Description	Mandatory	1	Briefly describe what the project is about in 1-3 sentences. Use clear, complete sentences. This can usually be found next to the project title on the poster.		• A platform for artists to share work and receive peer feedback. • An analysis of design and game elements that contribute to the success of Elden Ring.
course	Coverage	Mandatory	1	Use format: **XXXX [Course Name]**, where XXXX is the course number. Make sure that the course name is written in title case (capitalize the first letter of each major word).		• I695 HCI/d Capstone Thesis
date	Date	Mandatory	1	Use format: **YYYY**, where YYYY is four-digit project completion year. Don't add any months or dates.	W3 Date and Time Formats	• 2020 • 2024
term	Coverage	Required (if available)	0..1	Add the duration of the capstone course. If it was only one semester course, just mention one semester with year. Make sure to write in title case - capitalize the first letter (Fall, Spring).		• Fall 2023 - Spring 2024 • Spring 2025
thesis	Relation	Required (if available)	0..1	Include the file path to the digital documentation, available in pdf format. Make sure to enter the correct file path. Use format: **/hcidepot/objects/thesis/capstone_thesis_[YYYY]_[STUDENT'S NAME].pdf** (Note: This file needs to be stored under thesis folder in objects).		• /hcidepot/objects/thesis/capstone_2021_mike_wazowski.pdf
capstone_advisors	Contributor	Mandatory	1..n	Use format: **[FIRSTNAME] [(MIDDLE NAME)] [LAST NAME]**. Make sure to write it in title case. If multiple capstone advisors involved, separate by comma (,).		• Colin M. Gray, Kayce Reed-Buechlein, Michael Stallings • Sai Shruthi Chivukula
associate_instructors	Contributor	Required (if available)	0..n	Use format: **[FIRSTNAME] [(MIDDLE NAME)] [LAST NAME]**. Make sure to write it in title case. If multiple associate instructors involved, separate by comma (,).		• Fereshtehossadat Shojaei, Patrycja Zdziarska
prototype_link	Relation	Optional	0..1	Include a link to any digital prototype, demo, or related external media. Make sure to enter the full URL starting with http:// or https://.		• https://youtu.be/6TKMlFbmdgA?feature=shared
project_type	Subject	Mandatory	1	This information should be derived from the project's	See § Project Types in	• User Research for Design • Academic Research

				context. This will usually be mentioned in their documentation.	Project-Specific Controlled Vocabularies.	• Interaction Design • Service Design
project_theme	Subject	Optional	0..n	This information should be derived from the project's context. If multiple, separate by semicolon (;).	See § Project Themes in Project-Specific Controlled Vocabularies.	• Artificial Intelligence (AI) • Accessibility; Social Computing
industry_application	Subject	Optional	0..n	This information should be derived from the project's context. If multiple, separate by semicolon (;).	See § Industry Application in Project-Specific Controlled Vocabularies.	• Education • Retail; E-commerce • Gaming
user_groups	Subject	Optional	0..n	This information should be derived from the project's context. If multiple, separate by semicolon (;).	See § User Groups in Project-Specific Controlled Vocabularies.	• People with Disabilities • Students; Employees • Children
degree_book	Relation	Optional	0.1	Include the file path to the graduate degree book, available in pdf format. Make sure to enter the correct file path. Use format: **/hcidepot/objects/books/capstone_grad_book_[YYYY].pdf** (Note: This file needs to be stored under books folder in objects).		• /hcidepot/objects/books/capstone_grad_book_2024.pdf
source	Source	Mandatory	1	Enter the school associated with the capstone project. This can typically be found at the bottom of the project poster. Make sure to write in title case.		• Luddy School of Informatics, Computing, and Engineering
subject	Subject	Mandatory	1..n	Provide keywords for the project, separated by a semicolon (;). Make sure that keywords are relevant and concise. These can include technology names, specific tools, methodologies, or other terms that help describe the project's content.		• accessibility; interface design; virtual reality • unity • figma; arduino
language	Language	Optional	0..n	Specify the language of the project materials in format xxx. Follow 3-letter codes for ISO language names.	ISO 639-1 3-letter Language Codes	• eng • kor • hin
rights	Rights	Mandatory	1	Provide a free-text description of the rights, typically "student retains copyright." You may start it with the copyright symbol (©).		• © student retains copyright
rightsstatement	Rights	Mandatory	1	Provide a URI-based rights statement. Usually, students will hold the copyright over their work unless otherwise specified.	Rightsstatements.org	• https://rightsstatements.org/page/InC/1.0/?language=en

display_template	Format	Mandatory	1	Specify pdf or jpg depending on the capstone poster's file type.		• jpg • pdf
object_location	Identifier	Mandatory		Use format: **/objects/[poster filename].pdf** (Note: This file needs to be stored under objects folder and should match the exact file name).		• /objects/capstone_poster_2024_mike_wazowski.pdf
identifier	Identifier	Optional	1	To be added		
image_small	Relation	Mandatory	1	Use format: **/objects/small/[poster filename]_sm.jpg** (Note: You need to add this file path here so that these images can be generated using rake derivatives command later on.)		• /objects/small/capstone_poster_2024_mike_wazowski_sm.jpg
image_thumb	Relation	Mandatory	1	Use format: **/objects/thumbs/[poster filename]_th.jpg** (Note: You need to add this file path here so that these images can be generated using rake derivatives command later on.)		• /objects/thumbs/capstone_poster_2024_mike_wazowski_th.jpg
image_alt_text	Description	Optional	1	Briefly describe the contents of the capstone posters for better accessibility. This is marked as optional but it will be good to add this information whenever you can.		• Capstone poster of Mike Wazowski which describes how awesome monster inc movie was. It shows pictures from the movie from the factory.

7. Example: Metadata Record Based on the MAP Above:

objectid	capstone_2024_hidetaka_miyazaki
parentid	
filename	capstone_poster_2024_hidetaka_miyazaki.pdf
format	application/pdf
title	What Makes the Elden Ring Great?
description	An analysis of design and game elements that contribute to the success of Elden Ring.
creator	Hidetaka Miyazaki
course	I695 HCI/d Capstone Thesis
date	2024
term	Fall 2023 - Spring 2024
capstone_advisors	George R. R. Martin, Zin Naotoshi
associate_instructors	Masaru Kawaguchi
documentation	/hcidepot/objects/thesis/capstone_2024_hidetaka_miyazaki.pdf
prototype_link	https://www.youtube.com/watch?v=6uT8wGtB3yQ
project_type	Academic Research
project_theme	User Experience (UX) Design
industry_application	Gaming
user_groups	Gamers
degree_book	
source	Luddy School of Informatics, Computing, and Engineering
subject	gaming; dark souls; design
language	eng
rights	© student retains copyright
rightsstatement	https://rightsstatements.org/page/InC/1.0/?language=en
display_template	pdf
object_location	/objects/capstone_poster_2024_hidetaka_miyazaki.jpg
identifier	
image_small	/objects/small/capstone_poster_2024_hidetaka_miyazaki_sm.jpg
image_thumb	/objects/thumbs/capstone_poster_2024_hidetaka_miyazaki_th.jpg
image_alt_text	The capstone posters shows the opening scene of Elden Ring game with two knights fighting each other

8. Project-Specific Controlled Vocabularies

This section defines the controlled vocabularies for key metadata fields in the HCI /depot Capstone Collection. These controlled vocabularies will ensure consistency and standardization across capstone project entries in the digital archive.

8.1 Controlled Vocabulary for Project Type:

The Project Theme (*metadata property: **project_type***) field categorizes the methodology or primary approach used in each capstone project. It helps define the overall purpose and structure of the project, providing clarity for users on the type of work conducted. This field uses a controlled vocabulary to ensure consistency and standardization across the collection. The only four allowed values are:

Controlled Vocabulary Terms	Notes (Only for Reference)
Interaction Design	Projects focusing on the design and development of interactive digital products, interfaces, or systems. This includes designing user flows, prototyping, and usability testing to ensure a smooth user experience.
User Research for Design	Projects centered on conducting user research to inform the design process. This includes interviews, surveys, and usability tests aimed at understanding user needs, behaviors, and pain points to guide design decisions.
Service Design	Projects that go beyond traditional interaction design to look at the holistic service experience, including interactions between users, technology, and organizational processes. These projects often focus on user journeys and touchpoints to improve overall service delivery.
Academic Research	Projects that are more theoretical in nature, often involving hypothesis-driven research, data collection, and analysis to contribute new knowledge to the field of HCI/d. These may not have a direct design output but contribute to the academic understanding of user behaviors, design methods, or technology impact.

8.2 Controlled Vocabulary for Project Theme:

The Project Theme (*metadata property: **project_theme***) field categorizes the primary focus of the project based on the subject or domain it addresses. Themes are broad areas that help users quickly identify the nature of the project. This list is not exhaustive and can evolve over time as new themes and focus areas emerge through different projects, with input from students and faculty.

Controlled Vocabulary Terms
Accessibility
Artificial Intelligence (AI)
Virtual Reality (VR)
Augmented Reality (AR)
Data Visualization
User Experience (UX) Design
Cognitive Systems
Social Computing
Ethics in Design
Wearable Technology
Sustainability
Hobby Electronics

8.3 Controlled Vocabulary for Industry Application

The Industry Application (*metadata property: **industry_application***) field identifies the sector or industry where the project's outcomes are most applicable. This helps to connect projects to real-world use cases. This list is not exhaustive and can evolve over time, allowing for new sectors or industries to be added as students work on diverse projects, in collaboration with faculty.

Controlled Vocabulary Terms
Healthcare
Education
Entertainment
Social Media
Public Sector
Retail
E-commerce
Finance
Transportation
Gaming
Non-Profit
Social Good
Manufacturing
Energy
Sustainability
Agriculture
Marketing

8.4 Controlled Vocabulary for Target User Groups:

The Target User Groups (*metadata property:* **user_groups**) field specifies the primary audience or end users of the project. This field provides insights into who the project is designed for. The list is not exhaustive and can evolve over time with input from students and discussions with the program director, especially as new technologies and emerging audiences create the need to address additional user types.

Controlled Vocabulary Terms
General Public
Children
Elderly
Teenagers/Young Adults
Families
Low-income Communities
Rural Communities
Students
Researchers
Teachers
Professionals
Healthcare Providers
People with Disabilities
Neurodivergent Users
Non-native Language Speakers
Low-literacy Users
Visually Impaired Users
Gamers
Retail Customers
Wearable Technology Users

9. References:

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