

APPLICATIONS OF MIXED-INITIATIVE INTERFACES AND INTELLIGENCE TO ELECTRONIC PORTFOLIOS

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INTRODUCTION

- What are portfolios?
 - Collection of information
 - Highlights learning, career, experience and achievements
 - Can be used to augment traditional assessments
 - Can facilitate self-regulatory learning processes

INTRODUCTION

- ePortfolios are spreading:
 - Job applications
 - High school graduation (BC)
 - Marketing
- New tools are being written:
 - SPARC
 - OSPI
 - Commercial products

MOTIVATION

- We have a lot of buy-in from the institution side
 - Universities
 - Companies
- We have almost no buy-in from the user side!

BACKGROUND

- Our project is called SPARC
 - Student Portfolio Architecture and Research Community
 - Almost two years old
 - Second major revision
 - Client/server
 - Everything is an artifact
 - Currently has > 500 users

SPARC

- Split in two
 - Server-side is written in Java
 - Server uses SOAP to communicate
 - Multiple interfaces possible; currently use Java
- Portfolio creation occurs cyclically
 - Add artifacts
 - Create structure
 - Publish

CURRENT STATE

- System's initiative
 - Bringing in external artifacts
- User's initiative
 - Everything else
 - All system/user interactions

AREAS OF IMPROVEMENT

- How do we bring in mixed-initiative?
 - A system that can learn, then help users based on what it learns
 - Initial portfolio creation
 - Adding artifacts

WHAT WE DON'T WANT TO DO

- Wizard-style interfaces
 - Involves pre-programming portfolio types
 - We have identified at least 19 so far, in 4 categories
 - Little research has been done so far, and what has is inconclusive
 - Still constantly evolving

LEARNING USER INTENTIONS

- To be useful, we need to be able to learn and adapt
 - Figure out what the user is doing, recognize this over sessions and between users
 - Be able to apply this back to users

CREATING PORTFOLIOS

- Learn creation patterns
 - Initial layout of categories, for example
 - Recognize common layouts
 - If we see someone creating common categories, help them finish

ADDING ARTIFACTS

- We get metadata when assignment submission systems give us new artifacts
 - Automatically categorize artifacts based on previous user choices
 - Categorize based on other user choices for same artifacts

METHODS

- Utilizing MI-Edna software to help recognize opportunities
- Extend to learn about potential opportunity sports
- Utilize Fleming / Cheng's bother cost model, for example, to determine whether to do something on our own or wait for the user

KNOWLEDGE REPRESENTATION

- We've created an ontology to represent information held by the system
 - Interactions information
 - Portfolio information
 - Artifact information
 - Multiple users and portfolios
 - Needs to be further expanded for MI data

CONCLUSIONS

- Mixed-initiative may increase the usefulness of electronic portfolios
- A definite area of research!

THANKS!

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