The Narrative Approach to Personalisation

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The problem

Typically, personalised information portals have tended to focus on the tailored identification and ranking of relevant content or services (Agichtein 2006, Teevan 2005, Dou 2007) or simplistic ‘personalisation’ of the content presentation by including the user’s name, historical information/recently used references, or simple augmentation of screen layout (Ankolekar 2007).

What we want

• Adaptive content and service…
  • Selection
  • Composition
  • Navigation

• Employ a strategy to beyond the selection of the next item
  • Goal/Objective becomes important
The Narrative Approach

... in the narrative approach, the result of the personalisation is an adaptive hypermedia navigation structure that combines content and services in accordance with a strategy and through the reconciliation of a suite of models.

The Narrative Approach to Personalisation

narrative

/ˈnærətɪv/ (noun)

1. a spoken or written account of connected events; a story.
   "a gripping narrative"
   synonyms: account, story, tale, chronicle, history, description, record, portrayal, sketch, portrait, statement, report, rehearsal, recital, rendering
   "a chronological narrative of Stark's life"

adjective

1. in the form of or concerned with narration.
   "a narrative poem"
Concepts

• Instead of ‘events’ we are concerned with ‘concepts’
  • These may be derived from a domain model and/or determined by an expert

• The flow of the concepts is important as they bring the user from some start state to a goal state
  • “adaptive flow of concepts that are woven together to make a coherent offering to a user”
A narrative encapsulates strategies through which relationships between **concepts** in a domain are created and selected, in order to fulfil **objectives** within that domain. At design-time this **strategy (or strategies)** is **authored** in order to represent the variety of conceptual paths that comprise all potential experiences, and how models influence these paths. During execution, this strategy is **reconciled** with the appropriate **contextual models** (e.g. user model) to produce a conceptual pathway, tailored toward the specific instantiations of those models. The generation of each individual user’s experience involves the runtime **binding** of specific content and services to concepts in this pathway, or the further refinement of a concept through sub-strategy.

Narrative Approach Definition

A narrative encapsulates strategies through which relationships between concepts in a domain are created and selected, in order to fulfil objectives within that domain. At design-time this strategy (or strategies) is authored in order to represent the variety of conceptual paths that comprise all potential experiences, and how models influence these paths. During execution, this strategy is reconciled with the appropriate contextual models (e.g. user model) to produce a conceptual pathway, tailored toward the specific instantiations of those models. The generation of each individual user’s experience involves the runtime binding of specific content and services to concepts in this pathway, or the further refinement of a concept through sub-strategy.

A user’s journey
A user’s journey

Introduction

Different Routes

Ending

CS7155 - The Narrative Approach to Personalisation
Concepts and Objectives

• Concepts are typically expressed as part of a domain
• Concepts typically include
  • Description
  • Hierarchy
  • Relationships

• “The domain is considered to be the conceptual space in which the objectives of the experience being created are defined and has sufficient coverage, through concept relationships, to specify the likely start points from which a strategy may initiate an adaptive experience.”
Where does the conceptual space come from?

• Curricula
  • Defined vocabulary and relationships

• Uplifted from content
  • Defined vocabulary; relationships not apparent

• Expert knowledge
  • May be quite subjective; May be described in different ways

• Abstracted/learned from the paths of other users
  • Undefined vocabulary and weighted relationships
Strategy, Contextual Models and Reconciliation (1)

• Strategy at two levels
  • Conceptual selection and Content/Service Binding

• Focus on the former here
  • “A strategy is an approach (e.g. a set of logic or group of policies) that uses contextual models and the desired objectives to identify an appropriate conceptual pathway and set of guidelines in order to achieve those objectives”
  • May be iteratively executed
  • “… strategy should remain agnostic to the content/services that will be used to realize the constituent concepts and it may be, though not always, created independently to the domain.”
  • e.g. Knowledge Space Theory
Strategy, Contextual Models and Reconciliation (2)

• Contextual models used by the strategy to make decisions

• Contextual models may be both dynamic, updated in parallel to the execution of a strategy, and static, existing before the strategy is executed and not altered during its execution.
  • For personalization the most common dynamic model is that of the user.

• Output of the strategy execution is a specific concept pathway through the domain towards one or more objectives
  • Tailored to the contextual models
  • May also contain guidelines to support binding
Binding

• Many candidate assets that could suitably realize a concept
  • Metadata, including usage data, is used in conjunction with contextual models

• If no suitable resource found, generally because concept is too high-level, strategy may be re-executed to …
  • suggest finer-grained concepts
  • suggest an alternative pathway
What we covered today

CS7155 - The Narrative Approach to Personalisation
Reading for next the lecture

  • Just read pages 1 to 11.
Questions?

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