

WP#: AA1

Project Title: Secure Annotations

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- DART – UQ

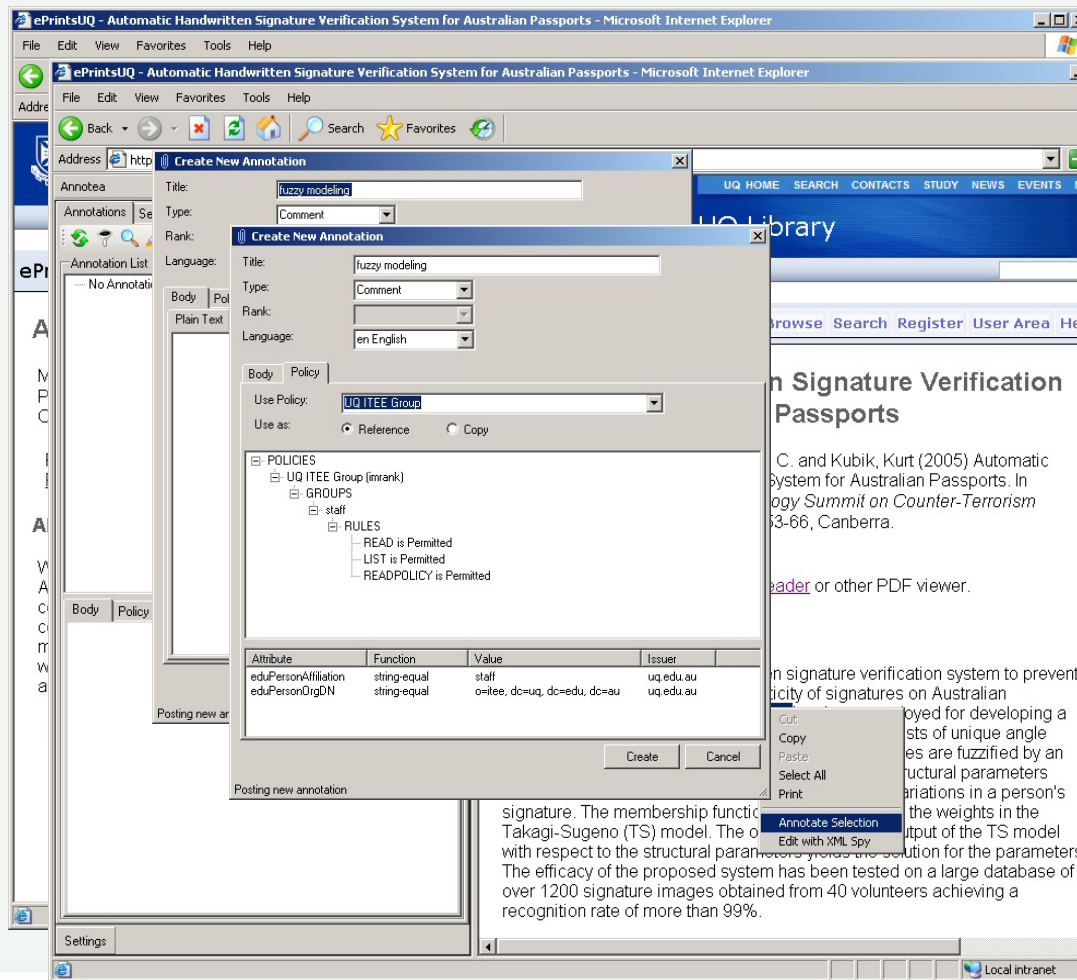


Outline of Work Package

- What are we doing?
 - “allow end-user control over who can annotate what, and who can access the annotation”
- How are we doing it?
 - Modify Annotea (W3C) to allow Shibboleth (Internet2) integration
 - Build tools to define access constraints using XACML (OASIS) policies
- What are the final outcome?
 - ‘Shibbolized’ Annotea server
 - Client-side tools for annotation creation, viewing and management

Usage Scenario

- Michael Browsing ePrints archive
- Michael wishes to annotate page
- Michael creates an annotation
- Michael attaches a policy



The screenshot shows the 'Create New Annotation' dialog box in a web browser. The dialog has the following fields and options:

- Title: fuzzy modeling
- Type: Comment
- Rank: (empty)
- Language: en English
- Body: (empty text area)
- Policy: UQ ITEE Group
- Use as: Reference (selected), Copy

The POLICIES tree view shows:

- UQ ITEE Group (mrank)
 - GROUPS
 - staff
 - RULES
 - READ is Permitted
 - LIST is Permitted
 - READPOLICY is Permitted

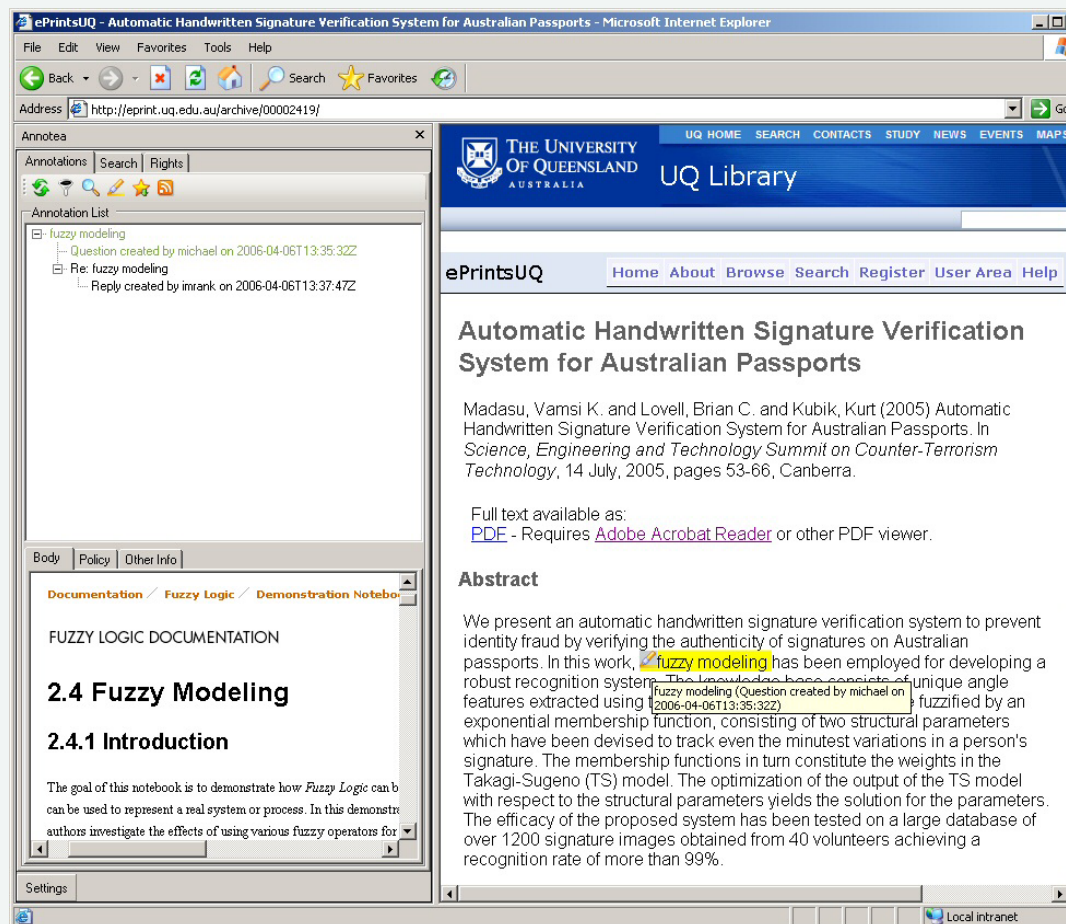
The table at the bottom of the dialog lists attributes:

Attribute	Function	Value	Issuer
eduPersonAffiliation	string-equal	staff	uq.edu.au
eduPersonOrgDN	string-equal	o=itee, dc=uq, dc=edu, dc=au	uq.edu.au

The background page is titled 'Automatic Handwritten Signature Verification System for Australian Passports' and contains text about the system's development and testing.

Usage Scenario

- Imran also browsing ePrints
- Imran answers question
- Could also use RSS



The screenshot shows a Microsoft Internet Explorer browser window displaying the ePrintsUQ website. The address bar shows the URL: <http://eprint.uq.edu.au/archive/00002419/>. The page title is "Automatic Handwritten Signature Verification System for Australian Passports".

The main content area includes a navigation menu with "Home About Browse Search Register User Area Help". Below this, the title "Automatic Handwritten Signature Verification System for Australian Passports" is displayed. The author information is: "Madasu, Vamsi K. and Lovell, Brian C. and Kubik, Kurt (2005) Automatic Handwritten Signature Verification System for Australian Passports. In *Science, Engineering and Technology Summit on Counter-Terrorism Technology*, 14 July, 2005, pages 53-66, Canberra."

Below the author information, it states "Full text available as: [PDE](#) - Requires [Adobe Acrobat Reader](#) or other PDF viewer."

The "Abstract" section reads: "We present an automatic handwritten signature verification system to prevent identity fraud by verifying the authenticity of signatures on Australian passports. In this work, **fuzzy modeling** has been employed for developing a robust recognition system. The knowledge base consists of unique angle features extracted using **fuzzy modeling** (Question created by michael on 2006-04-06T13:35:32Z) fuzzified by an exponential membership function, consisting of two structural parameters which have been devised to track even the minutest variations in a person's signature. The membership functions in turn constitute the weights in the Takagi-Sugeno (TS) model. The optimization of the output of the TS model with respect to the structural parameters yields the solution for the parameters. The efficacy of the proposed system has been tested on a large database of over 1200 signature images obtained from 40 volunteers achieving a recognition rate of more than 99%."

An "Annotations" window is open over the page, showing an "Annotation List" with two entries:

- [-] fuzzy modeling
 - [-] Question created by michael on 2006-04-06T13:35:32Z
 - [+] Re: fuzzy modeling
 - [-] Reply created by imran on 2006-04-06T13:37:47Z

Below the annotation list, there are tabs for "Body", "Policy", and "Other Info". The "Body" tab is selected, showing a document preview with the following text:

Documentation / Fuzzy Logic / Demonstration Notebook

FUZZY LOGIC DOCUMENTATION

2.4 Fuzzy Modeling

2.4.1 Introduction

The goal of this notebook is to demonstrate how *Fuzzy Logic* can be used to represent a real system or process. In this demonstration, authors investigate the effects of using various fuzzy operators for

Usage scenario

- John Smith from QUT wants to access to annotations
- Modify the policy associated with annotation

The screenshot shows a dialog box titled "Update Existing Policy" with a close button (X) in the top right corner. The "Policy Title" is "UQ ITEE Group". The main area contains a tree view under "POLICIES":

- UQ ITEE Group (mrank)
 - GROUPS
 - itee_staff
 - RULES
 - READ is Permitted
 - LIST is Permitted
 - READPOLICY is Permitted
 - evaluator
 - RULES
 - READ is Permitted
 - LIST is Permitted
 - READPOLICY is Permitted

Below the tree view is a section titled "Edit Group Information of evaluator" containing a table:

Attribute	Function	Value	Issuer	
eduPersonAffiliation	string-equal	staff	qut.edu.au	-
eduPersonOrgDN	string-equal	o=itee, dc=qut, d...	qut.edu.au	-
eduPersonPrincipalName	string-equal	john_smith@qut...	qut.edu.au	-
				+

At the bottom of the dialog are "Update" and "Cancel" buttons.



Current work

- What has been done?
 - Deployment of Shibboleth
 - Development of Annotea server and protocol to incorporate XACML policies
 - Creation of IE sidebar
- Some additional features include:
 - Search/Filtering of annotations
 - RSS Servlet
 - Annotations of arbitrary type (e.g. images, video)



Key Problems/Issues

- Annotation of PDF (proprietary restrictions)
- Balancing Policy definition:
 - Simple user interface
 - Allow for greatest utilization of XACML features
- Encourage active user utilization
- Browser support

Future Expansion

- Create setup files for server and IE sidebar
- Annotating additional formats:
 - PDF
 - Images
- Bookmark integration (Connotea, del.icio.us)
- Web Portal (summaries, analysis, etc)
- User Evaluation