# Intelligent Search for Biologically Inspired Design

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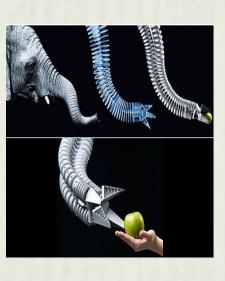
Design & Intelligence Laboratory, School of Interactive Computing Georgia Institute of Technology

# Biologically Inspired Design:

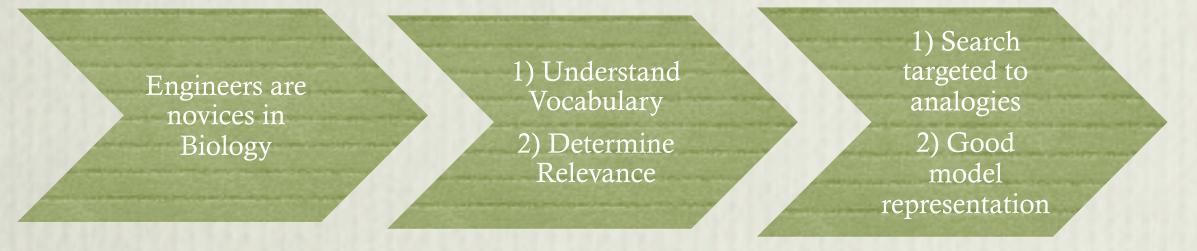
~Cross-domain Analogies



Biology -> Engineering



## Problem:



#### User Interface:

#### IBID - Intelligent Biologically Inspired Design You have chosen: **IBID Search Results** For the search: acquire Functions transport\_of\_fatty\_acids.txt.txt **ABCDEFGHIKLMNOPQRSTWY** Open Semantic Analysis Steps 0 / ± Sentence Evangelia Predicate Levitt D. Thematic Roles Shkolnik A early research Attribute an adequate explanation Search Term Sentence Predicate Thematic Roles Agent an adequate explanation

#### Scenario 1:

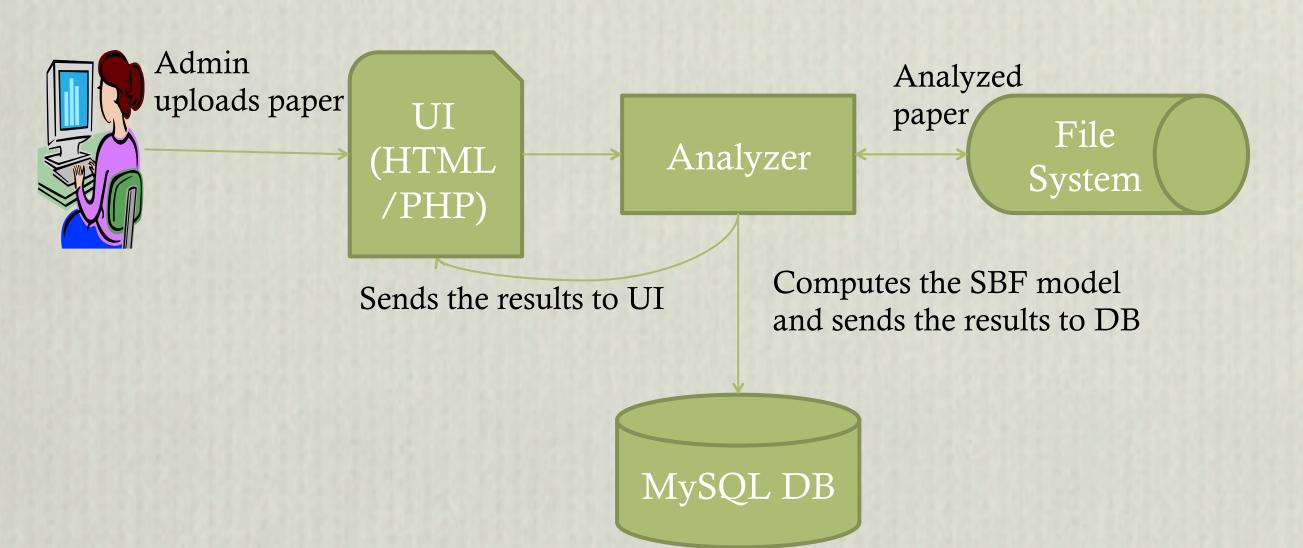
Engineer searches for papers



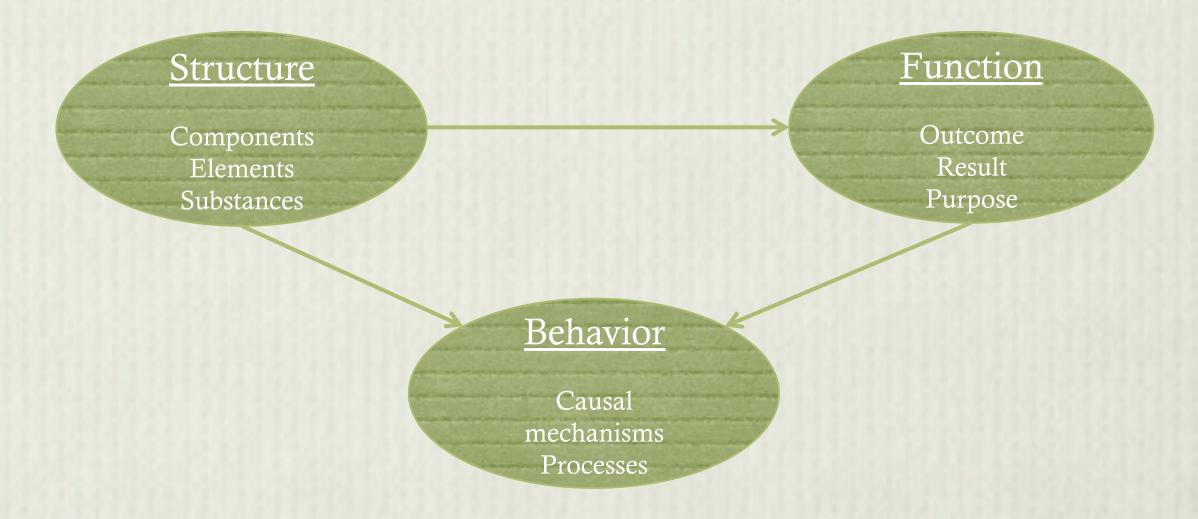
Relevant pages from the DB fetched and rendered

## Scenario 2:

Admin adds biology paper to DB



## SBF model:



# IBID vs Keyword-based search:

# 1) Precision

Semantic tagging improves precision. Search targeted to find cross-domain analogies. Semantic modeling is necessary to represent content.

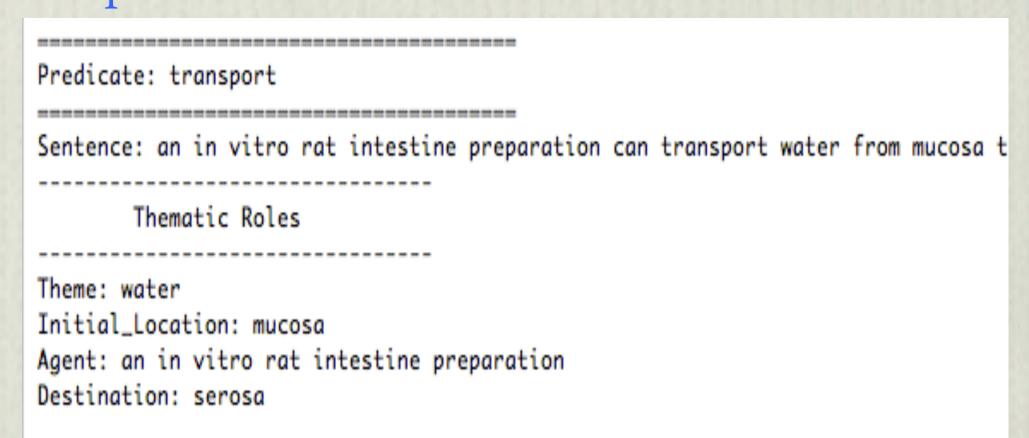
#### 2) Relevance

Able to represent content/mechanisms. Improves understanding of text by model representation.

# Analysis of Function component:

Text: 'An in vitro rat intestine preparation can transport water from mucosa to serosa.'

#### Output:



#### Scenario 3:

Taxonomy expert updates Taxonomy

