Voice Driven Command Control (VDCC)

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The Consortium will digitize specimen descriptions, illustrations and annotation notes for more than 1.2 million North American microfungi specimens.

38 institutions in 31 states to digitize their microfungi records


Skeletal records -> Transcribing
-> Geo-referencing
Skeletal records, Transcribing, Geolocation

- Time
- Automation/OCR
- Speed
Record editing

- Key stroke
- Cut and paste
Workflow

• Staging tasks
• People
Repetition

- Undo, redo & duplication
- Quality control/Error checking
Processing improvements

- Streamline workflow
- Open source solutions
  - Minimal added costs
  - Accessible to existing systems
  - Custom development
  - Existing workflows (i.e. Symbiota)
VDCC: Simple interface

- Browser plugin
  - Minimal additional training
  - No need for additional software
- Built-in
  - Error checking
  - Repeated tasks
  - User settings
VDCC: Components

- Speech to text to form
- HTML5 speech to text input
VDCC: Components

- Speech to text to form
  - HTML5 speech to text input
  - JavaScript command list interface
VDCC: Components

- Speech to text to form
  - HTML5 speech to text input
  - JavaScript command list interface
  - Apply form modifications
    - Form Submit pre-processor
VDCC: Browser plugin

• Command options
  • Parses page form objects on load
  • Defines elements to be effected
    • <form> <input /> </form>
VDCC: Browser plugin

- Command options
  - Parses page form objects on load
  - Defines elements to be effected
    - `<form> <input /> </form>`
  - Association with name, id, or text attributes
VDCC: Text input examples

- Command options
  - "change name to Chris"
  - "change state to Illinois"
  - "change age to 32"
  - "append comments with My statement of additional notes STOP append"
VDCC: Select item examples

• Command options
  • "change yesorno to yes"
  • "reset color"
  • "select color blue"
  • "select color red"
VDCC: Batch processing examples

- Command options
  - "undo change name"
  - "redo change name"
  - "submit form"
  - "copy"
VDCC: `<form />` processing

- Form parsing challenges
  - identifying name, id, or `<select>`Text`</select>`
  - Handling all form elements
    - text field
    - textarea
    - radio button
    - checkbox
    - select and multi-select
VDCC: `<form />` processing

- Form parsing challenges
  - Attribute value consistency
    - `<input name="firstname" ... />`
    - `<input name="first_name" ... />`
    - `<input name="fname" ... />`
VDCC: `<form />` processing

- Form parsing challenges
  - identifying name, id, or `<select>`Text`</select>`
    - `<input name="firstname" ... />`
    - `<input id="firstname" ... />`
    - `<select><option value="firstname" >First name</option> ...`
VDCC: Command list processing

- Error correction
  - Natural language processing
  - Limiting choices based on data
VDCC: Turn On, Turn Off

- Opt out
  - Enable or disable plugin loading
  - Form processing
VDCC: No browser support, no problem

- Using other speech to text functions with Command Control widget
  - Mac OS X: Dictation and speech
  - Microsoft Windows speech recognition
  - iOS and Android
  - Third party software

ILLINOIS NATURAL HISTORY SURVEY
PRAIRIE RESEARCH INSTITUTE
VDCC: Example demo

- Example demo: Simple form
  - Google Chrome widget
  - Mac OS X: Dictation and speech
Will this save time?

- **Use case**
  - Constructing a complete list of commands, apply once
  - Transcription events in Symbiota
  - Mobile device annotations
Recap

- Existing software plugin
  - Open source
  - User options stored
  - Undo/Redo/Repeat
Potential

• Speech to text -> text to speech interactions
Potential

- Speech to text -> text to speech interactions
  - Voice correction response
  - ‘Staged’ form interactions
  - Copy command from clipboard or third party software
Questions

• [http://www.microfungi.org/vdcc](http://www.microfungi.org/vdcc)
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