



Decapod

Jess Mitchell, Fluid Project Manager



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The
Andrew W. Mellon
Foundation

Who is Decapod?

Technical University of Kaiserslautern (DFKI)
Image Understanding and Pattern Recognition
(IUPR)

University of Toronto (UTor)
Adaptive Technology Resource Centre (ATRC)
Fluid Project

JSTOR



What is Decapod?

a low-cost **digitization solution** that will allow for rare materials, materials held in collections without large budgets, and other scholarly content to be digitized into a **high-quality PDF format.**



Problems we're addressing

- cost (equipment and staff and training)
- errors (process is imperfect)
- fragile materials
- open source (make it available, modular, and flexible)

Who will use it?

- Librarians
- Administrators with sensitive materials
- Archivists
- Scholarly Content Providers
- Independent Scholar

Challenges with OCR

- fonts and typefaces
- handwriting
- internationalization (different languages and alphabets)
- layouts (columns, illustrations, complex lists and tables)
- old, fragile, discolored texts

mobile
web
tagging
search

OCRopus

Technical University of Kaiserslautern
(DFKI); Image Understanding and Pattern
Recognition (IUPR)

Google sponsored
pluggable, high quality / low cost

built on top of HPs Tesseract OCR Engine

what it will do

1. Allow the camera based capture of bound material by using computer vision techniques to produce flat, clean page images equivalent to those produced from a flat bed scanner.
2. Remove the need for extensive operator intervention in the capture process by detecting scan problems and allowing the operator to rescan if needed.
3. Reduce user intervention in the conversion process by using advanced document understanding techniques to achieve a very simple "I-click" operation.

what it will do

4. PDF/A outputs will be visually faithful to the original, searchable, and widely usable.
5. Allow the output to be viewable on mobile devices that support PDF reflow.
6. Remove cost barriers by using consumer cameras.
7. Reduce operational cost barriers by allowing operation of the system with minimal training.

Decapod

pluggable OCRopus:
layout analysis, character recognition, and
language modeling

Calibrate
cameras

Capture
images

Normalize
white &
Dewarp

Rescan

Layout
analysis &
Export
to PDF

The Solution



The Solution

- 2 digital cameras
- tripod
- computer running Ubuntu

Decapod

http://localhost:8080/

[Help](#)

Welcome to Decapod

New Book

Book Title:

Book Author:

Publisher:

Copyright Year:

Notes:

Saved Books

- Byzantine Mosaics by Peter Smith, Predictable House, 1923
- The Nile Watershed by Nancy Lee, International Journal of Ecology, 2002
- Lost Birds of the Amazon by Shirly Sandoval, Bird Book Press, 1962

Projects Location:

[Help](#)

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[Help](#)



http://localhost:8080/



Decapod

No pictures yet.

Fix Image

Compare Before / After



Take Picture

Camera Zoom: 7



Decapod

1 Unfixed

Delete

Fix Image

Compare Before / After

6

her eyes open and she lay down on her bed and knew nothing more for a long time.

Many things happened during the hours in which she slept so heavily, but she was not disturbed by the walls and the sound of things being carried in and out of the bungalow.

When she awakened she lay and stared at the wall. The house was perfectly still. She had never known it to be so silent before. She heard neither voices nor footsteps, and wondered if everybody had got well of the cholera and all the trouble was over. She wondered also who would take care of her now her Ayah was dead. There would be a new Ayah, and perhaps she would know some new stories. Mary had been rather tired of the old ones. She did not cry because her nurse had died. She was not an affectionate child and had never cared much for any one. The noise and hurrying about and wailing over the cholera had frightened her, and she had been angry because no one seemed to remember that she was alive. Every one was too panic-stricken to think of a little girl no one was fond of. When people had the cholera it seemed that they remembered nothing but themselves. But if every one had got well again, surely some one would remember and come to look for her.

But no one came, and as she lay waiting the house seemed to grow more and more silent. She heard something rustling on the matting

Take Picture

Camera Zoom: 7



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Decapod

1 Unfixed

[Faded text from a document]

Delete

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Take Picture

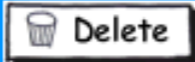
Camera Zoom: 7



Decapod

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Fixing Image...

[Progress bar with diagonal lines]

Take Picture

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Copyrighted material



Take Picture

Camera Zoom: 7





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Image successfully fixed.

5

When things happened like this, the house is silent...
When she awakened she lay and stared at the wall...
The house was perfectly still. She had never known it to be so silent before...

Delete

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- The Nile Watershed by Nancy Lee, International Journal of Ecology, 2002
- Lost Birds of the Amazon by Shirly Sandoval, Bird Book Press, 1962
- Lorem ipsum dolor sit amet, consectetur adipiscing elit.
- Quisque scelerisque pharetra tortor, ut placerat lacus fermentum eu.
- Proin in ante vel massa auctor tincidunt.
- Morbi cursus luctus lorem, sed aliquet libero lacinia eu.
- Sed ornare feugiat elit, quis porttitor enim faucibus quis.
- Mauris mattis sem a urna ornare feugiat suscipit urna feugiat.
- Maecenas fringilla malesuada ipsum, in pharetra risus cursus eget.

Projects Location:

- Decapod File (.DEC)
- Acrobat PDF (.PDF)**
- Multipage TIFF (.TIFF)

[Help](#)

Decapod

http://localhost:8080/

Saving Books to Acrobat PDF

Status

<input checked="" type="checkbox"/> Done	View	Byzantine Mosaics by Peter Smith, Predictable House, 1923
<input type="checkbox"/> Working		The Nile Watershed by Nancy Lee, International Journal of Ecology...
<input type="checkbox"/> Queued		Morbi cursus luctus lorem, sed aliquet libero lacinia eu.
<input type="checkbox"/> Queued		Sed ornare feugiat elit, quis porttitor enim faucibus quis.
<input type="checkbox"/> Queued		Mauris mattis sem a urna ornare feugiat suscipit urna feugiat.



can you use it?
how can you contribute to
it?



Links

- <http://sites.google.com/site/decapodproject/Home>
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- <http://sites.google.com/site/ocropus/>
- <http://fluidproject.org/projects/decapod/>
- [Questions: jess@jessmitchell.com](mailto:jess@jessmitchell.com)