

ICDAR 2011 Robust Reading Competition

Challenge 1: “Reading Text in Born-Digital Images (Web and Email)”

<http://www.cvc.uab.es/icdar2011competition/>

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ICDAR 2011 Robust Reading Competition

Two Challenges:

- Challenge 1: “**Reading Text in Born-Digital Images (Web and Email)**”
- Challenge 2: “Reading Text in Scene Images”



Born Digital Images

- Low-Resolution
- Digitally Created Text
- Compression
- Anti-Aliasing



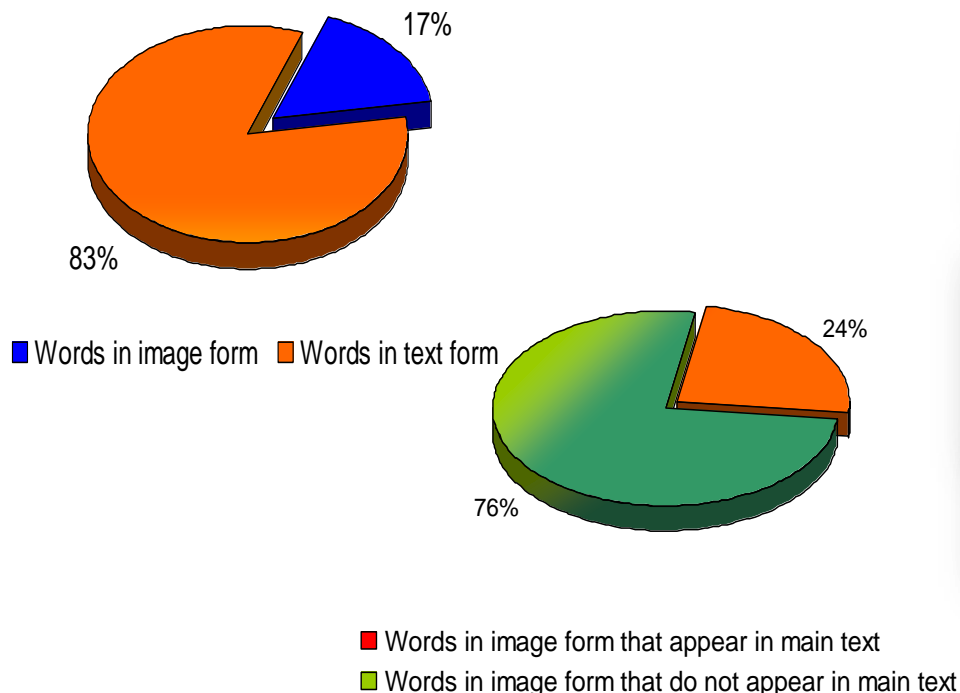
Real Scene Images

- High-Resolution
- Captured Text
- Illumination Artefacts
- Perspective



The Challenge

Images are important **information carriers**. In electronic documents (e-mails, Web pages) images are used to carry **semantically important text**: Headers, Logos, Titles, Captions, ...



A great part of this information is **nowhere else** other than in the images!



The Challenge

[Contacta con nosotros para obtener una asistencia o un presupuesto. Si no ves correctamente este mensaje, \[haz clic aquí\]\(#\)](#)




Nuevo producto ! [Más información →](#)

expansys presenta el equipo estéreo del coche hecho para el iPhone :

PARROT RKi8400 [Comprar !](#)

"Un sonido excepcional en tu coche" [más información →](#)









FM/AM TUNING SUPER EASY LINE OUT 2.4" TFT 36 MID-BASS 4x50 AUTO INSERT PUNCHING USER INDEPENDENT



1. **Reproduce** la música de tu iPhone/iPod !
2. **Visualiza** las carátulas de tu iPhone/iPod en la pantalla a color
3. **Coloca** tu teléfono en el compartimento mientras se carga [más información →](#)



4. **Realiza** y recibe llamadas fácilmente en modo manos libres
5. **Reconocimiento** de voz sin necesidad de grabación previa...
6. **Disfruta** del efecto DSP Virtual SuperBass [más información →](#)



Preços, imagens y textos no contractuais y susceptibles de modificação em qualquer momento. São dados os preços indicados no site [www.expansys.pt](#). Los precios se indican con IVA.

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Nuevo producto ! [Más información →](#)


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Si deseas cancelar la suscripción a la newsletter de expansys: [haz clic aquí](#)

[expansys](#) - Parc Euroba, 295 rue de Troy - CS90054 - Montpellier Cedex 2

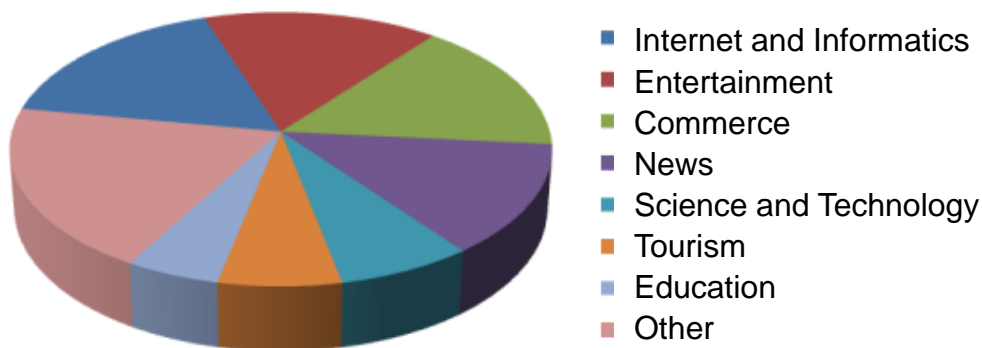
Copyright 2009 - [expansys](#) - [El Lector Pro](#)

Objectives (I)

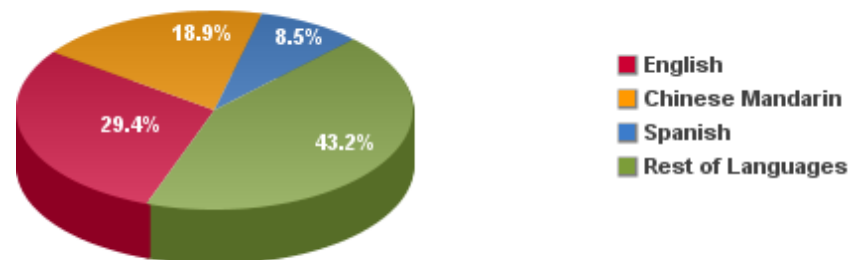
Create a **representative** dataset of born-digital images

- Easy to collect, but what is representative?
- Two main types of born-digital documents: Web and Email
- Only English language for the time being

| | |
|-------------------------|-----|
| HTML Documents Analysed | 412 |
| Web Pages | 315 |
| Email (spam) | 22 |
| Email (ham) | 75 |



Top 3 Internet Languages



Source: Internet World Stats - www.internetworldstats.com/languages.htm
Based on 1,463,632,361 estimated Internet users for 2Q 2008
Copyright © 2008, Miniwatts Marketing Group

Objectives (II)

Create new **tools** for ground truthing

- From born-digital document management to GT management
- From text localisation and transcription to pixel level segmentation

Ground Truth Datasets

Ground Truth Datasets / WebImages

Hello dimosLogout

GTGenerator -> 501-51.png

Load Image... Load XML... Add a new line with... Save to XML... View Actual XML Configuration Info

filename: 501-51.png
width: 238 height: 186
GT author:
GT comments: Skeleton of starting S needs editing

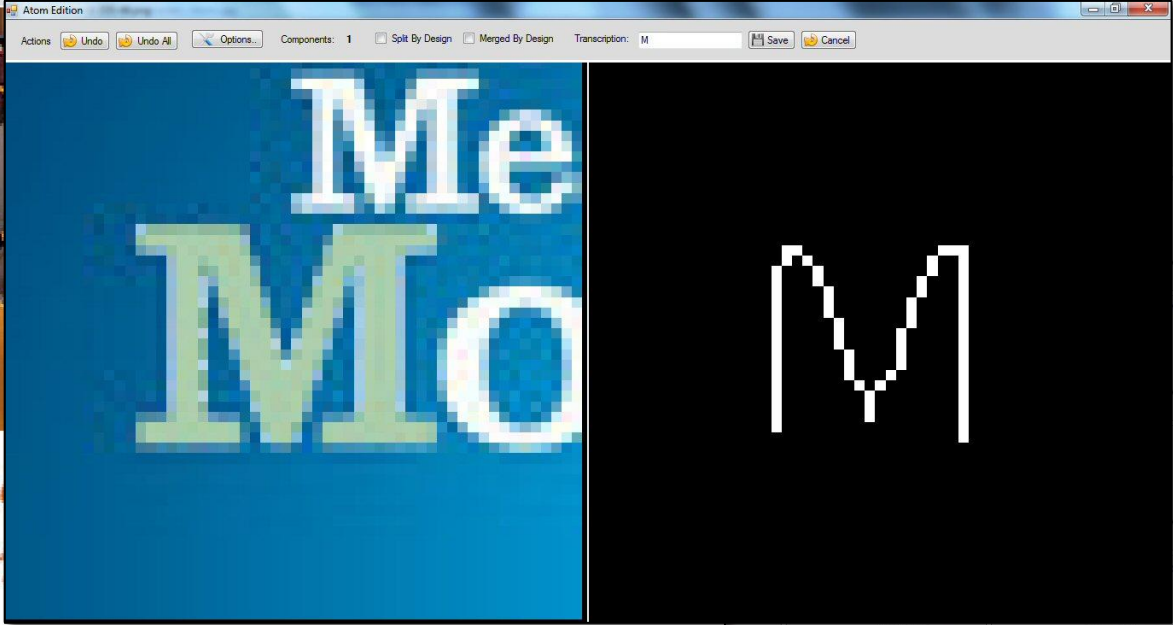
| Atom | Transcription | Merged | Split | Components |
|------|---------------|--------|-------|------------|
| 0 | S | No | No | 1 |
| 1 | pectacular | Yes | No | 1 |

| Word | Transcription | Atoms |
|------|---------------|-------|
| 0 | Spectacular | 2 |

| Line | Transcription | Atoms | Words |
|------|---------------|-------|-------|
| 0 | Spectacular | 0 | 1 |
| 1 | Events | 0 | 1 |
| 2 | contact | 0 | 1 |
| 3 | 440-824-3517 | 0 | 1 |

Atom Edition

Actions Undo Undo All Options... Components: 1 Split By Design Merged By Design Transcription: M Save Cancel



assign to me selected images

| name | type | dim | size | G.T. versions | Assigned to dimos |
|-----------------|------|--------------|-------|---------------|-------------------|
| balcony-upg.jpg | jpg | 299 x 140 px | 18739 | 0 | Assigned to dimos |
| header_new_UN | gif | 194 x 30 px | 4837 | 0 | Assigned to dimos |
| italy1.jpg | jpg | 300 x 150 px | 23311 | 0 | Assigned to dimos |
| october | jpg | 560 x 210 px | 52237 | 0 | Assigned to dimos |

Objectives (III)

Offer a **qualitative** performance evaluation framework

- Final OCR results are not informative
- But the pipeline is not strictly defined
- A number of **independent tasks** were therefore planned
- Qualitative performance evaluation **for each task**

*Series of steps and
intermediate goals towards
text extraction ...*



Colour
Segmentation



Text Extraction
Characters



Text Extraction
Words / Lines



Text Localisation

Structure

The challenge was organised over 3 tasks:

Task 1 – Text Localization

Objective: To obtain a rough estimation of text areas in the image, in terms of bounding boxes corresponding to parts of text (words or text lines)



Task 2 – Text Segmentation

Objective: Pixel-level separation of text from the background

Task 3 – Word Recognition

Objective: Assuming known word bounding boxes, to obtain the correct text transcriptions



Datasets and Ground Truth

New Datasets created for this challenge

- Images extracted from different types of HTML documents (Web pages, spam and ham emails)
 - Minimum image size: 100 x 100
- Word images (cut-out) provided separately
 - Minimum word size: 3 characters
- Different ground truth provided for the three tasks
 - Task 1: Bounding box positions of individual words
 - Task 2: Pixel-level classification to text / non-text
 - Task 3: Word images with transcription

Datasets in Numbers

| | |
|--------------------------------|------|
| HTML Documents Analysed | 412 |
| Training Dataset (Full Images) | 420 |
| Test Dataset (Full Images) | 102 |
| Training Dataset (Word Images) | 3583 |
| Test Dataset (Word Images) | 918 |

Timeline

Web Site Online

Registrations Open

25/2

Training Set
Online

20/3

Test Set
Available

1/6

Results Submission
Deadline

3/6

Feb

Mar

Apr

May

Jun

The screenshot shows the ICDAR 2011 Robust Reading Competition website. The header includes the CVC logo and the competition title. The main content area is titled 'Tasks' and describes the challenge setup. It lists three tasks: Text Localization, Text Segmentation, and Word Recognition. The training set is described as 420 images containing 4319 words. The website also features a 'News' section with updates and an 'Important Dates' section with key deadlines.

ICDAR 2011 Robust Reading Competition
Challenge 1: "Reading Text in Born-Digital Images (Web and Email)"

Register Now

Introduction Tasks News Procedure Downloads FAQ Results Summary Contact Information

Tasks

The Challenge is set up around three tasks:

- Text Localization**, where the objective is to obtain a rough estimation of the text areas in the image in terms of bounding boxes that correspond to parts of text (words or text lines).
- Text Segmentation**, where the objective is the pixel level separation of text from the background.
- Word Recognition**, where the locations (bounding boxes) of words in the image are assumed to be known and the corresponding text transcriptions are sought.

A training set of 420 images (containing 4319 words) is provided through the [Downloads](#) section. The training set is common for all three competitions, although different ground truth data is provided for each of the tasks. In a similar fashion, a test set of around 100 images (containing around 400 words) will be used for evaluation.

All images are provided as PNG files and the text files are ASCII files with CR/LF new line endings.

Task 1.1: Text Localization

For the text localization task we provide bounding boxes of words for each of the images. The ground truth is given as separate text files (one per image) where each line specifies the coordinates of one word's bounding box and its transcription in a comma separated format (see Figure 1).

Figure 1 shows an example of a text localization task. It displays two images: 'img_1.png' and 'img_2.png'. The first image shows the word 'okcupid' with a bounding box. The second image shows the word 'okcupid' with a bounding box. The bounding box is defined by the coordinates '10, 59, 106, 86, "okcupid"'. The text file 'gt_img_1.txt' contains the coordinates and the word 'okcupid'.

Open mode participation:
Participants run their own
algorithms and provided results.

Participating Methods

Participation in Numbers

| | |
|------------------------|-----|
| Visits of the Web Site | 692 |
| Registered Users | 37 |
| Submissions (Task 1) | 6 |
| Submissions (Task 2) | 3 |
| Submissions (Task 3) | 1 |

Submissions Received

| Submitted Methods | Task 1: Text Localization | Task 2: Text Segmentation | Task 3: Word Recognition |
|------------------------------|---------------------------|---------------------------|--------------------------|
| TH-TextLoc / TH-OCR (China) | X | | X |
| TDM_IACAS (China) | X | | |
| OTCYMIST (India) | X | X | |
| SASA (USA) | X | X | |
| TextHunter (Pakistan/France) | X | | |
| Textorter (Pakistan) | X | X | |

Results: Task 1 – Text Localization

Performance Evaluation Methodology

- Methodology proposed by **Wolf and Jolion [1]**
- Takes into account both
 - Bounding Box area overlapping and
 - Precision at the level of detection counts
- Possible to create meaningful cumulative **results over many images**
- Ways to deal with **one-to-many** and **many-to-one** cases
- Set up to **penalise over-segmentation** (words split to parts), but no under-segmentation (group of words detected as text line)

1. C. Wolf and J.M. Jolion, “Object Count / Area Graphs for the Evaluation of Object Detection and Segmentation Algorithms”, IJDAR 8(4), pp. 280-296, 2006

Results: Task 1 – Text Localization

Baseline Method

- We used a commercial OCR package (ABBYY OCR SDK v.10) to obtain text localization and word recognition (see task 3) results
- Factory default parameters used, enabling the option for low-resolution images

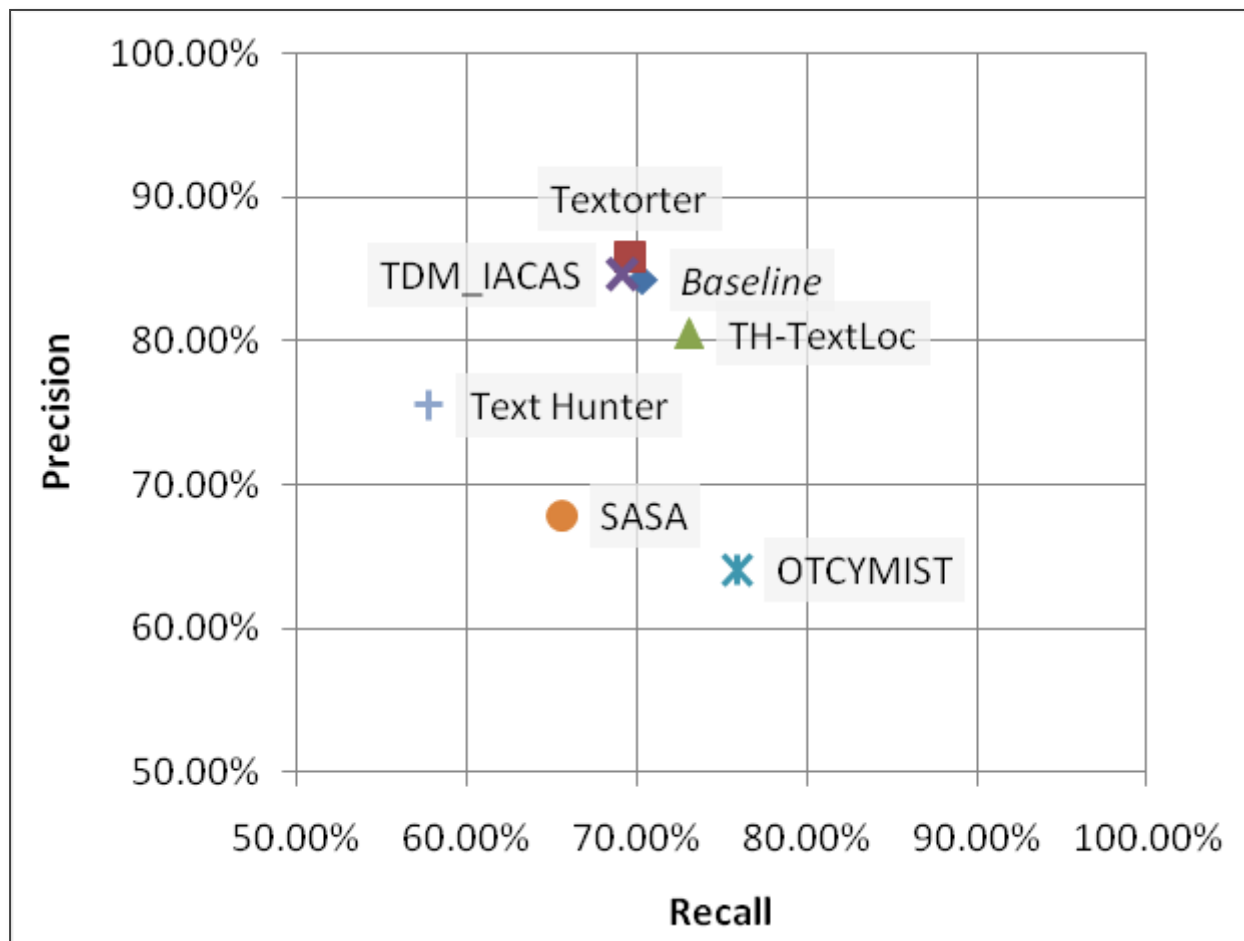
Results: Task 1 – Text Localization

Text Localization Results (%)

| Rank | Submitted Methods – Task 1 | Recall | Precision | Harmonic Mean |
|------|----------------------------|--------|-----------|---------------|
| 1 | Textorter | 69.62 | 85.83 | 76.88 |
| 2 | TH-TextLoc | 73.08 | 80.51 | 76.62 |
| 3 | TDM_IACAS | 69.16 | 84.64 | 76.12 |
| 4 | OTCYMIST | 75.91 | 64.05 | 69.48 |
| 5 | SASA | 65.62 | 67.82 | 66.70 |
| 6 | Text Hunter | 57.76 | 75.52 | 65.46 |
| N/A | <i>Baseline Method</i> | 70.32 | 84.25 | 76.66 |

Results: Task 1 – Text Localization

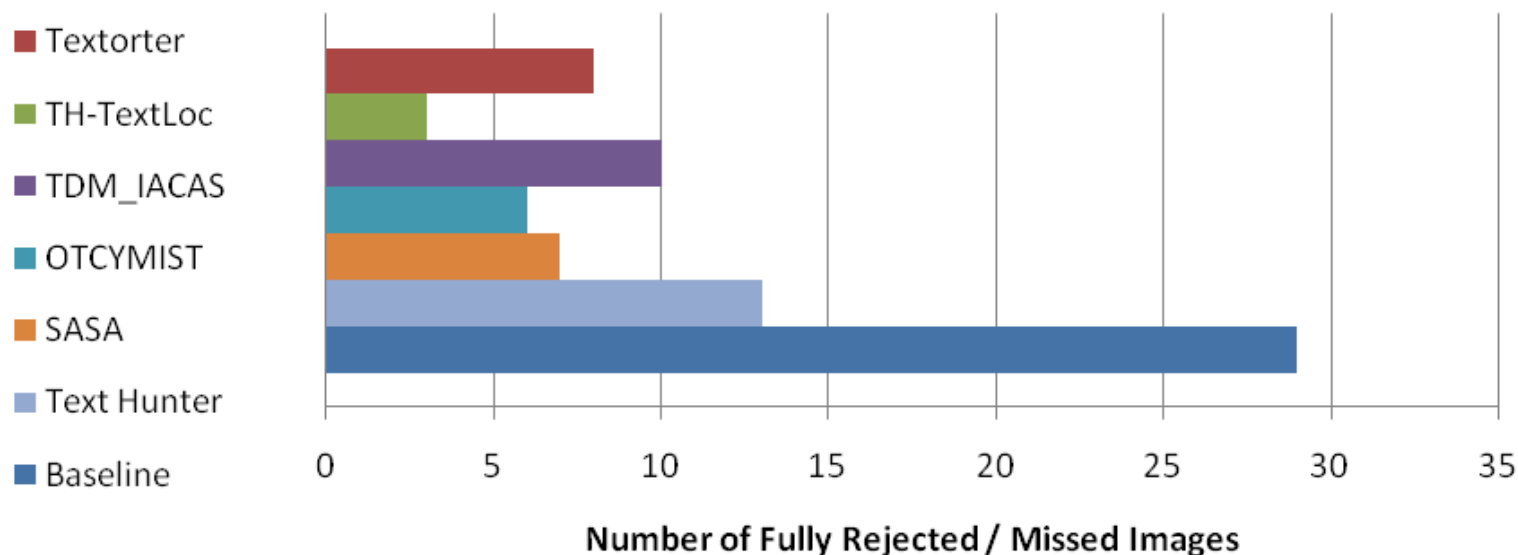
Text Localization Results (Precision / Recall)



Results: Task 1 – Text Localization

Observations

- Commercial system works at par with submitted methods
- Detailed analysis shows qualitative difference: baseline system more efficient in rejecting images it could not treat



Results: Task 2 – Text Segmentation

Performance Evaluation Methodology

- Primary scheme used is the framework proposed by Clavelli et al [2]
- It measures the degree to which morphological properties of the text are preserved, not simply the number of misclassified pixels
- As a secondary evaluation scheme we implemented standard pixel level precision and recall (compatibility with other results)



(a)



(b)



(c)

2. A. Clavelli, D. Karatzas and J. Lladós “A Framework for the Assessment of Text Extraction Algorithms on Complex Colour Images”, DAS 2010, pp. 19-28, 2010

Results: Task 2 – Text Segmentation

Text Segmentation Results (%) – Primary Evaluation Scheme

| Rank | Submitted Methods – Task 2 | Well Segmented | Merged | Lost |
|------|----------------------------|----------------|--------|-------|
| 1 | OTCYMIST | 65.96 | 15.44 | 18.59 |
| 2 | Textorter | 58.73 | 32.53 | 08.73 |
| 3 | SASA | 42.71 | 10.70 | 46.57 |

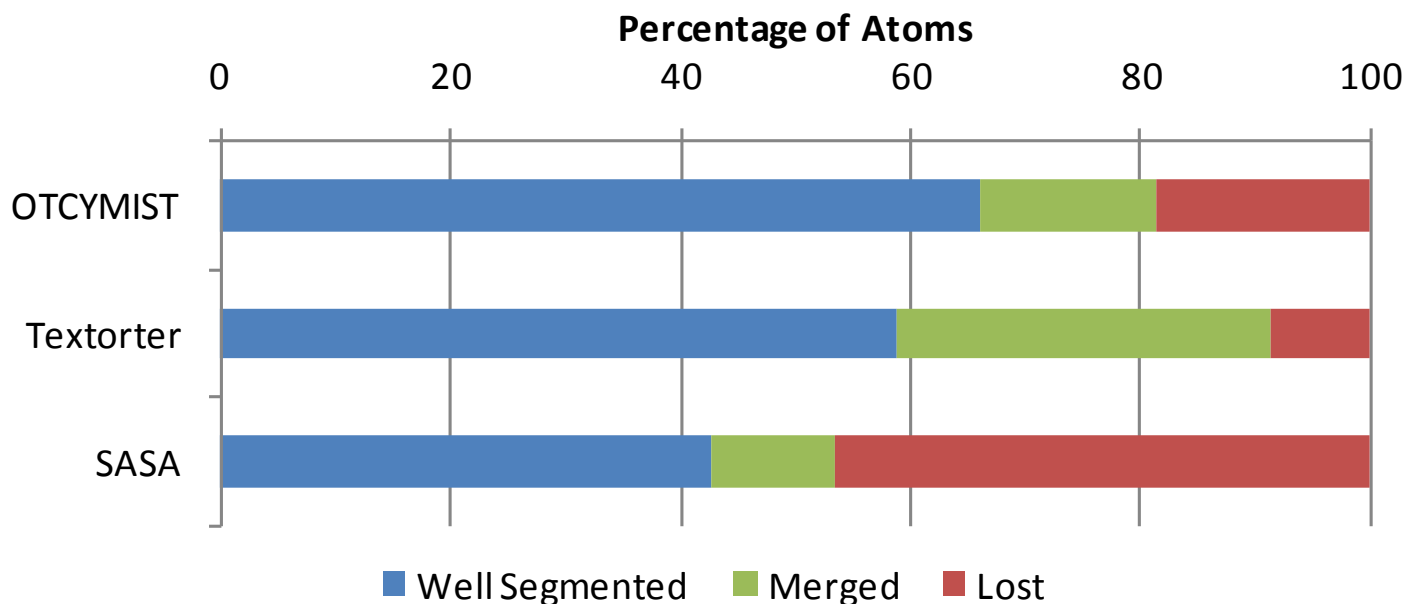
Text Segmentation Results (%) – Secondary Evaluation Scheme

| Rank | Submitted Methods – Task 2 | Precision | Recall | Harmonic Mean |
|------|----------------------------|-----------|--------|---------------|
| 1 | OTCYMIST | 80.99 | 71.13 | 75.74 |
| 2 | Textorter | 65.20 | 62.50 | 63.82 |
| 3 | SASA | 71.93 | 54.78 | 62.19 |

Results: Task 2 – Text Segmentation

Observations

- Both metrics used agree in the ranking, nevertheless there is qualitative differences pointed out by the primary metric
- The main problem of “Textorter” seems to be that of under-segmentation



Results: Task 3 – Word Recognition

Performance Evaluation Methodology

- Edit distance (normalised to the length of the ground truth transcription)
- Equal weights for deletions, additions, substitutions
- Also report statistics on correctly recognised words

Baseline method

- Used ABBYY OCR (v.10) on word images
- No pre-processing, option for “low resolution” images turned on

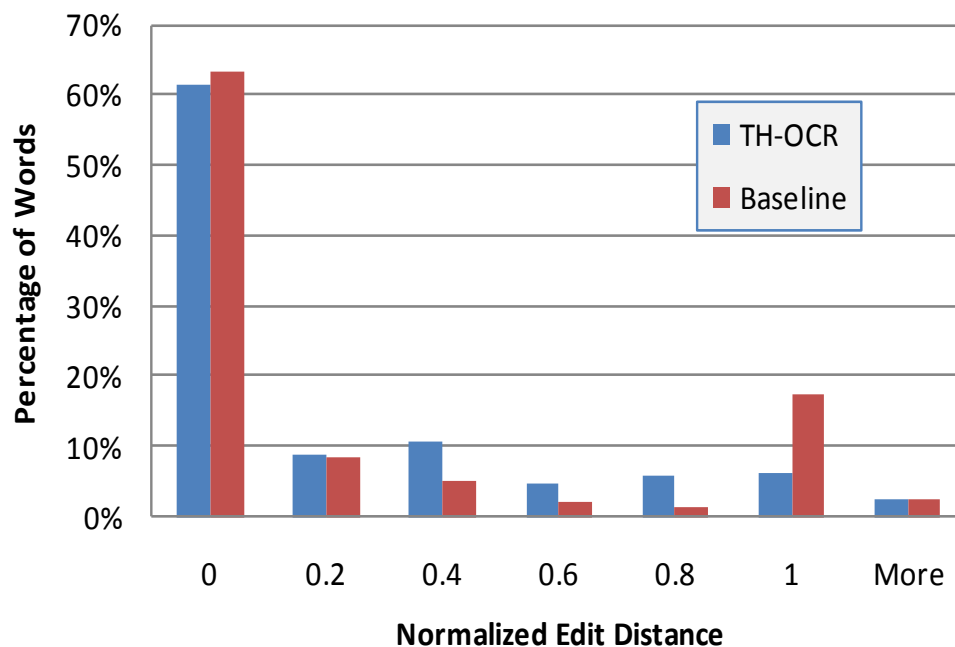
Results: Task 3 – Word Recognition

Word Recognition Results

| Rank | Submitted Methods – Task 3 | Total Edit Distance | Correctly Recognized Words (%) |
|------|----------------------------|---------------------|--------------------------------|
| N/A | TH_OCR | 189.9 | 61.54 |
| N/A | <i>Baseline Method</i> | 232.8 | 63.40 |

Observations

- Edit distance peak of baseline at 1 (all characters changed, indicative of an empty response)
- Baseline seems to have a good rejection criterion
- 48.8% words recognized by both



What's Next

The competition site is open!
Register to download the
datasets and upload new results

<http://www.cvc.uab.es/icdar2011competition/>



The competition is going on – entering a **continuous mode**


Datasets are freely available (on Competition Web site and soon on TC11)

Performance evaluation available online – automatic and real-time!

Watch this space – **more resources coming**:

- Full Ground Truth (XML)
- New datasets (including real scenes and colour documents)
- Online GT management framework
- Ground truthing tools

What's Next



Computer Vision Center

ICDAR 2011 Robust Reading Competition

Users list | Methods list | Dimosthenis Karatzas | Log out

Introduction | Tasks | News | Procedure | Downloads | F.A.Q. | Submit results | Contact information

Submit results

Task 1: Text Localisation


| Submit | Participant | folder | method | Validated | num GT | num Det | Recall | Precision | Hmean | |
|---------------------|---------------------------|------------|-------------|-----------|--------|---------|--------|-----------|--------|---------------------------|
| 173 03-Jun-11 19:25 | 21 Deepak Kumar | icdar_2011 | OTCYMIST | OK (102) | 1081 | 1236 | 75.91% | 64.05% | 69.48% | details.. |
| 168 03-Jun-11 14:07 | 30 Muhammad Shehzad Hanif | icdar_2011 | Text Hunter | OK (102) | 1081 | 504 | 57.76% | 75.52% | 65.46% | details.. |
| 166 03-Jun-11 08:59 | 18 zhangyang | icdar_2011 | | OK (102) | 1081 | 777 | 73.21% | 46.72% | 57.04% | details.. |
| 161 03-Jun-11 08:14 | 14 Chen Yang | icdar_2011 | TH-TextLoc | OK (102) | 1081 | 779 | 73.08% | 80.51% | 76.62% | details.. |
| 157 02-Jun-11 22:04 | 32 sams | icdar_2011 | Textorter | OK (102) | 1081 | 614 | 69.62% | 85.83% | 76.88% | details.. |
| 131 02-Jun-11 19:15 | 29 cxi | icdar_2011 | SASA | OK (102) | 1081 | 650 | 65.62% | 67.82% | 66.7% | details.. |
| 115 01-Jun-11 16:38 | 39 joan | icdar_2011 | Baseline | OK (102) | 1081 | 904 | 70.32% | 84.25% | 76.66% | details.. |
| 113 01-Jun-11 03:08 | 17 Yunxue Shao | icdar_2011 | TDM_JACAS | OK (102) | 1081 | 422 | 69.16% | 84.64% | 76.12% | details.. |


Task 2: Text Segmentation

| Submit | Participant | folder | method | Validated | Well s. | Merged | Lost | Recall | Precision | Hmean | |
|---------------------|-----------------|------------|-----------|-----------|---------|--------|-------|--------|-----------|-------|---------------------------|
| 175 03-Jun-11 19:25 | 21 Deepak Kumar | icdar_2011 | OTCYMIST | OK (102) | 65.96 | 15.44 | 18.59 | 80.99 | 71.13 | 75.74 | details.. |
| 159 02-Jun-11 22:06 | 32 sams | icdar_2011 | Textorter | OK (102) | 58.73 | 8.73 | 32.53 | 65.2 | 62.5 | 63.82 | details.. |
| 135 02-Jun-11 19:20 | 29 cxi | icdar_2011 | SASA | OK (102) | 42.71 | 10.7 | 46.57 | 71.93 | 54.78 | 62.2 | details.. |
| 119 02-Jun-11 17:54 | 39 joan | icdar_2011 | Baseline | OK | | | | | | | Calculate |

Task 3: Word Recognition


| Submit | Participant | folder | method | Validated | Total Edit distance | Correctly Recognised Words | |
|---------------------|--------------|------------|----------|-----------|---------------------|----------------------------|---------------------------|
| 163 03-Jun-11 08:25 | 14 Chen Yang | icdar_2011 | | OK (918) | 20.73% | 61.55% | details.. |
| 125 02-Jun-11 18:20 | 39 joan | icdar_2011 | Baseline | OK (918) | 25.36% | 63.51% | details.. |


 [download](#)



News


- 05/31/2011 [Test Sets Now Available!](#)
- 05/31/2011 [Submission is Now Open](#)
- 05/24/2011 [Submission Guidelines Updated](#)
- 03/19/2011 [Training Datasets Now Available!](#)

 [add new](#)




Important Dates

- 25 February: Webpage is now online! Registrations page is open.
- 20 March: Training dataset will be available
- 1 June: Test dataset available
- 1-3 June: Test period
- 3 June: Submission of results























MINISTERIO DE CIENCIA E INNOVACIÓN

"HuPerText" Project (TIN2008-04998)




What's Next

| | | | |
|---|---|---|---|
|  <p>image 5 recall 33.33 % precision 50 % hmean 40 %</p> |  <p>image 6 recall 76.19 % precision 100 % hmean 86.49 %</p> |  <p>image 7 recall 85.71 % precision 100 % hmean 92.31 %</p> |  <p>image 8 recall 100 % precision 100 % hmean 100 %</p> |
|  <p>image 9 recall 58.62 % precision 88.89 % hmean 70.65 %</p> |  <p>image 10 recall 69.23 % precision 85.71 % hmean 76.6 %</p> |  <p>image 11 recall 83.33 % precision 100 % hmean 90.91 %</p> |  <p>image 12 recall 92.31 % precision 100 % hmean 96 %</p> |
|  <p>image 13 recall 80 % precision 100 % hmean 88.89 %</p> |  <p>image 14 recall 66.67 % precision 90 % hmean 76.6 %</p> |  <p>image 15 recall 20 % precision 80 % hmean 32 %</p> |  <p>image 16 recall 71.43 % precision 100 % hmean 83.33 %</p> |
|  <p>image 17 recall 88 % precision 100 % hmean 93.62 %</p> |  <p>image 18 recall 86.96 % precision 100 % hmean 93.02 %</p> |  <p>image 19 recall 75.24 % precision 98.46 % hmean 85.3 %</p> |  <p>image 20 recall 83.33 % precision 100 % hmean 90.91 %</p> |
|  <p>image 21 recall 31.58 % precision 66.67 %</p> |  <p>image 22 recall 31.58 % precision 66.67 %</p> |  <p>image 23 recall 86.67 % precision 100 %</p> |  <p>image 24 recall 86.67 % precision 100 %</p> |



What's Next



ICDAR 2011 Robust Reading Competiton

Users list Methods list Dimosthenis Karatzas Log out

Challenge 1: "Reading Text in Born-Digital Images (Web and Email)"

IntroductionTasksNewsProcedureDownloadsF.A.Q.Submit resultsContact information

Submit results

[Back to your results](#)

Task 1 - Text Localization

method: ICDAR 2011 Textorter

[Previous](#) Image 59 of 102 [Next](#) [Images list](#) [Hide Legend](#)

One-to-One

One Ground Truth rectangle matches against one Detected rectangle

Many-to-One

A set of Ground Truth rectangles matches against one Detected rectangle

One-to-Many

One Ground Truth rectangle matches against a set of Detected rectangles



Not matches

The Ground Truth rectangle doesn't match with a set of Detected rectangles or the Detected rectangle can't be matched against any set of Ground Truth rectangles

recall: 84.29 % precision: 80 % hmean: 82.09 %

Ground Truth B.B.

Detected B.B.



Method comparison

| sel. | Method | Recall | Precision | Hmean |
|----------------------------------|----------------------------|--------|-----------|-------|
| <input type="radio"/> | 113 ICDAR 2011 TDM_JACAS | 92.86 | 100 | 96.3 |
| <input type="radio"/> | 166 ICDAR 2011 | 92.86 | 100 | 96.3 |
| <input type="radio"/> | 173 ICDAR 2011 OTCYMIST | 97.14 | 93.33 | 95.2 |
| <input type="radio"/> | 161 ICDAR 2011 TH-TextLoc | 85.71 | 100 | 92.31 |
| <input type="radio"/> | 115 ICDAR 2011 Baseline | 90 | 94.67 | 92.27 |
| <input type="radio"/> | 131 ICDAR 2011 SASA | 85.71 | 85.71 | 85.71 |
| <input checked="" type="radio"/> | 157 ICDAR 2011 Textorter | 84.29 | 80 | 82.09 |
| <input type="radio"/> | 168 ICDAR 2011 Text Hunter | 61.43 | 77.78 | 68.64 |

News

- 05/31/2011 Test Sets Now Available!
- 05/31/2011 Submission is Now Open
- 05/24/2011 Submission Guidelines Updated
- 03/19/2011 Training Datasets Now Available!

[add new](#)

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"HuPerText" Project (TIN2008-04998)




What's Next

| | | | | |
|---|--|--|--|---|
| <p>well segm 83.78 % recall 95.35 % precision 88.15 %</p> | <p>image 2 well segm 52 % recall 100 % precision 78.96 %</p> | <p>well segm 62.18 % recall 98.02 % precision 79.87 %</p> | <p>well segm 19.15 % recall 46.69 % precision 60.26 %</p> | <p>available</p> <ul style="list-style-type: none"> 1 June: Test dataset available 1-3 June: Test period 3 June: Submission of results |
| <p>Clubcard</p> <p>image 5 well segm 80 % recall 86.25 % precision 22.4 %</p> | <p>amazon.co.uk</p> <p>image 6 well segm 80.99 % recall 86.15 % precision 94.68 %</p> | <p>Click here for the following services: from Barclays</p> <ul style="list-style-type: none"> Savings customers R&B International Financial Planning <p>image 7 well segm 72.63 % recall 99.85 % precision 76.13 %</p> | <p>Click here for the following services: available through Santander & Barclay</p> <ul style="list-style-type: none"> Existing Mortgage customers Existing & New Insurance customers Existing Investment customers Existing Protection customers <p>image 8 well segm 67.82 % recall 99.21 % precision 75.7 %</p> | <p> "HuPerText" Project (TIN2008-04998)</p> |
| <p>"CREDIT CARDS. 0% FOR 9 MONTHS ON BALANCES TRANSFERRED NOW"</p> <p>15.9% APR typical variable.</p> <p>Find out more</p> <p>image 9 well segm 27.78 % recall 93.68 % precision 75.91 %</p> | <p>REDUCED MORTGAGE RATES</p> <p>Find out more</p> <p>image 10 well segm 16.96 % recall 15.58 % precision 19.58 %</p> | <p>Loans</p> <p>Helping you stay in control of your finances</p> <p>Find out more</p> <p>image 11 well segm 94.12 % recall 99.47 % precision 99.89 %</p> | <p>Current accounts</p> <p>Switch to us and put your feet up</p> <p>Find out more</p> <p>image 12 well segm 92.16 % recall 98.36 % precision 95.51 %</p> | |
| <p>FREE online security software</p> <p>image 13 well segm 58.67 % recall 91.69 % precision 82.34 %</p> | <p>"Play 60 With Me!"</p> <p>image 14 well segm 62.5 % recall 73.91 % precision 62.78 %</p> | <p>Spectacular Events</p> <p>image 15 well segm 0 % recall 15.21 % precision 94.79 %</p> | <p>This Month at Zopa</p> <p>image 16 well segm 76.67 % recall 83.61 % precision 87.63 %</p> | |
| <p>QUESTION OF THE MONTH</p> <p>image 17 well segm 68.81 % recall 70.28 % precision 61.18 %</p> | <p>ResearcherID VOICES</p> <p>image 18 well segm 78.51 % recall 90.01 % precision 91.65 %</p> | <p>image 19 well segm 91.38 % recall 96.27 % precision 56.34 %</p> | <p>image 20 well segm 83.22 % recall 93.69 % precision 88.05 %</p> | |
| <p>FREE WEBINAR</p> <p>image 21 well segm 79.31 % recall 91.69 % precision 82.34 %</p> | <p>image 22 well segm 91.53 % recall 89.16 % precision 46.04 %</p> | <p>image 23 well segm 71.05 % recall 87.58 % precision 87.24 %</p> | <p>image 24 well segm 58.33 % recall 91.69 % precision 82.34 %</p> | |



What's Next



ICDAR 2011 Robust Reading Competition

Challenge 1: "Reading Text in Born-Digital Images (Web and Email)"

[Users list](#) [Methods list](#) [Dimosthenis Karatzas](#) [Log out](#)

[Introduction](#) [Tasks](#) [News](#) [Procedure](#) [Downloads](#) [F.A.Q.](#) [Results Summary](#) [Contact information](#)

Results Summary

[Back to your results](#)

Task 2 - Text Segmentation

method: ICDAR 2011 Textorter

[Previous](#) **Image 24 of 102** [Next](#) [Images list](#)

well segmented: 58.33 % hmean: 56.62 %

original image



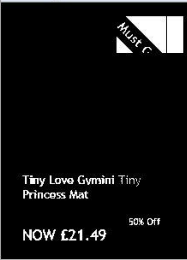


image g.t.



detected g.t.



Method comparison

| sel. Method | Well segmented | Merged | Lost | Recall | Precision | Hmean |
|----------------------|----------------|--------|-------|--------|-----------|-------|
| ICDAR 2011 Baseline | 25 | 75 | 0 | 100 | 53.42 | 69.64 |
| ICDAR 2011 OTCYMIST | 46.67 | 30 | 23.33 | 79.46 | 52.25 | 63.05 |
| ICDAR 2011 Textorter | 58.33 | 10 | 31.67 | 73.43 | 46.08 | 56.62 |
| ICDAR 2011 SASA | 38.33 | 26.67 | 35 | 75.79 | 32.69 | 45.68 |

News

- 05/31/2011
Test Sets Now Available!
- 05/31/2011
Submission is Now Open
- 05/24/2011
Submission Guidelines Updated
- 03/19/2011
Training Datasets Now Available!

[add new](#)

Important Dates


- 25 February: Webpage is now online! Registrations page is open.
- 20 March: Training dataset will be available
- 1 June: Test dataset available
- 1-3 June: Test period
- 3 June: Submission of results



"HuPerText" Project (TIN2008-04998)



What's Next

| | | |
|--|--|---|
| <p>normalised 0</p> <p>component</p> <p>word 733 gt component detection component edit dist. 0 normalised 0</p> | <p>normalised 0</p> <p>evaluation.</p> <p>word 734 gt evaluation. detection evaluation. edit dist. 0 normalised 0</p> | <p>normalised 0</p>  <p>word 735 gt Deadline! detection edit dist. 9 normalised 1</p> |
| <p>Rarely</p> <p>word 736 gt Rarely detection edit dist. 6 normalised 1</p> | <p>Asked</p> <p>word 737 gt Asked detection Asked edit dist. 0 normalised 0</p> | <p>Questions</p> <p>word 738 gt Questions detection WKBHMIM edit dist. 9 normalised 1</p> |
| <p>sensoror</p> <p>word 739 gt sensoror detection sensoror edit dist. 0 normalised 0</p> | <p>SHARE</p> <p>word 740 gt SHARE detection SHARE edit dist. 0 normalised 0</p> | <p>THIS</p> <p>word 741 gt THIS detection THIS edit dist. 0 normalised 0</p> |
| <p>CONTENT</p> <p>word 742 gt CONTENT detection CONTENI edit dist. 1 normalised 0.14</p> | <p>MORE...</p> <p>word 743 gt MORE... detection MORE... edit dist. 0 normalised 0</p> |  <p>word 744 gt 30% detection edit dist. 3 normalised 1</p> |
|  <p>word 745 gt off*</p> | <p>Amsterdam</p> <p>word 746 gt Amsterdam</p> | <p>Apartments</p> <p>word 747 gt Apartments</p> |



Thanks for participating!

Task 1 – Text Localization Winner: “**Textorter**”, *S. Tehsin and A. Masood*, Military College of Signals, National University of Science and Technology, Pakistan

Task 2 – Text Segmentation Winner: “**OTCYMIST**”, *D. Kumar and A.G. Ramakrishnan*, Medical Intelligence and Language Engineering Laboratory, Indian Institute of Science, Bangalore, India

Task 3 – Word Recognition Mention: “**TH_OCR**”, *C. Yang, C. Liu and X. Ding*, Department of Electronic Engineering, Tsinghua University Beijing, China

The competition site is open!
Register to download the
datasets and upload new results

<http://www.cvc.uab.es/icdar2011competition/>

