

ICDAR 2024 Competition on Historical Map Text Detection, Recognition, and Linking

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Grinnell College



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Motivations for another Robust Reading Challenge

Important, underexploited historical knowledge

Historical documents challenges

+ Map content challenges

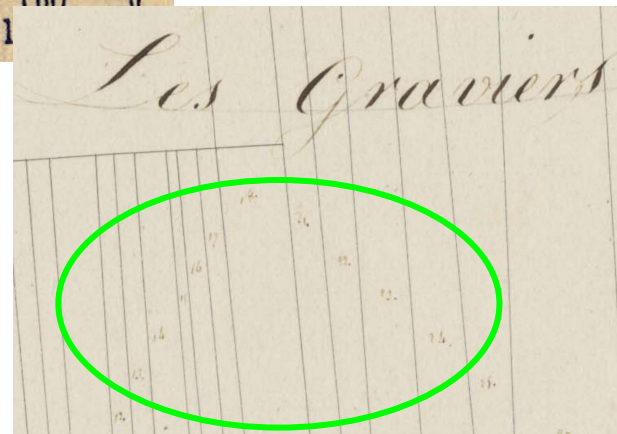
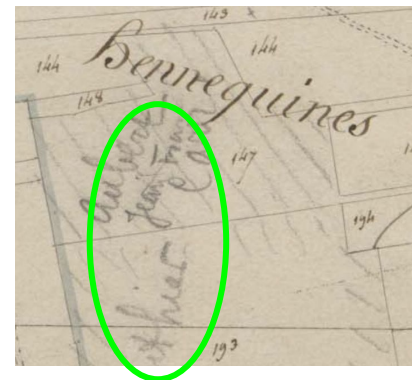
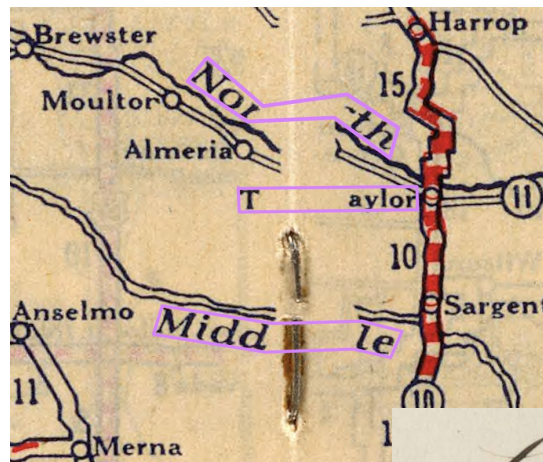
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- Erased, damaged, altered, sometimes handwritten content 🙌



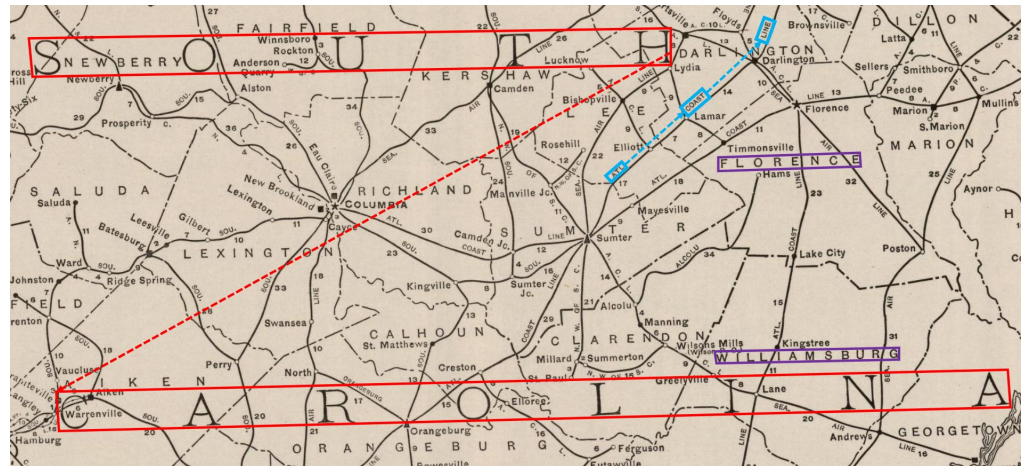
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- Hierarchical structure 👉



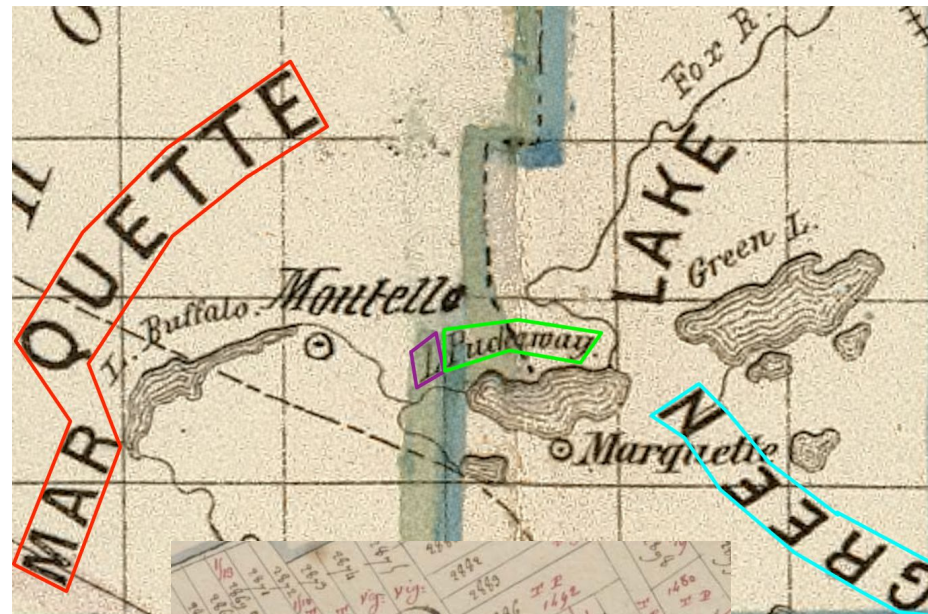
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- Hierarchical structure
- Many overlappings, large letter spacing, dense content, various orientations 🙌



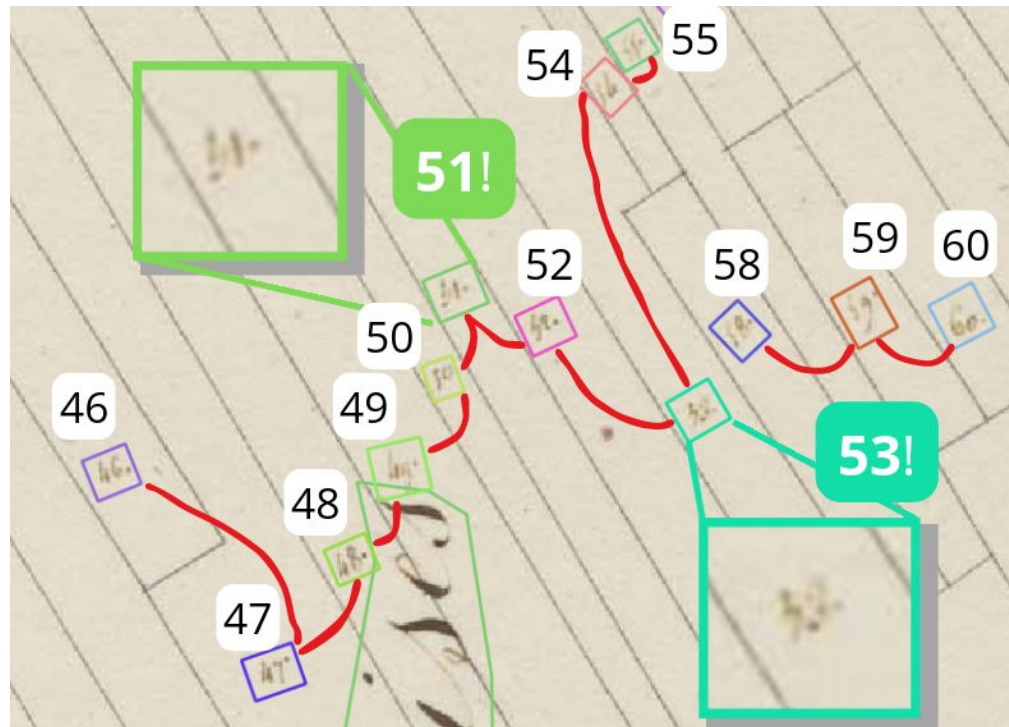
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- Many overlappings, large letter spacing, dense content, various orientations
- Contextual interpretation can be necessary



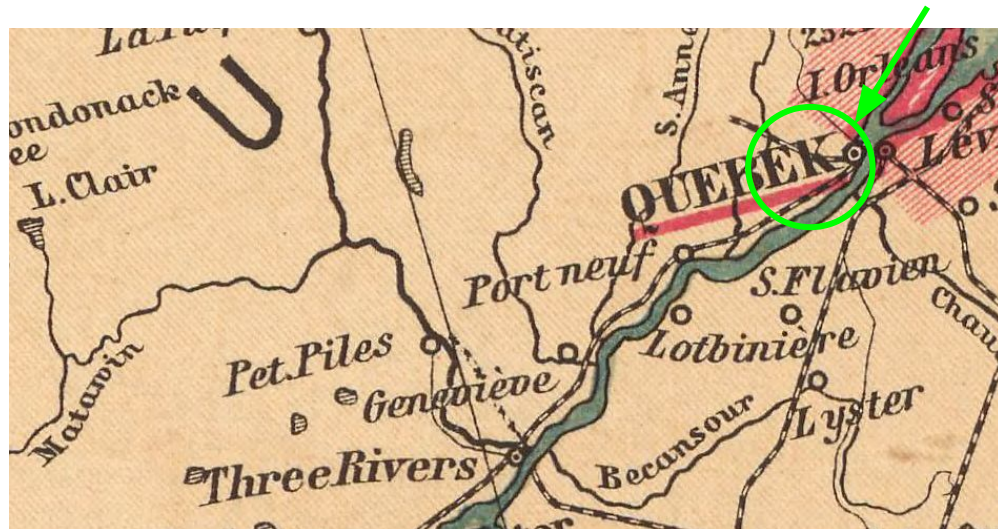
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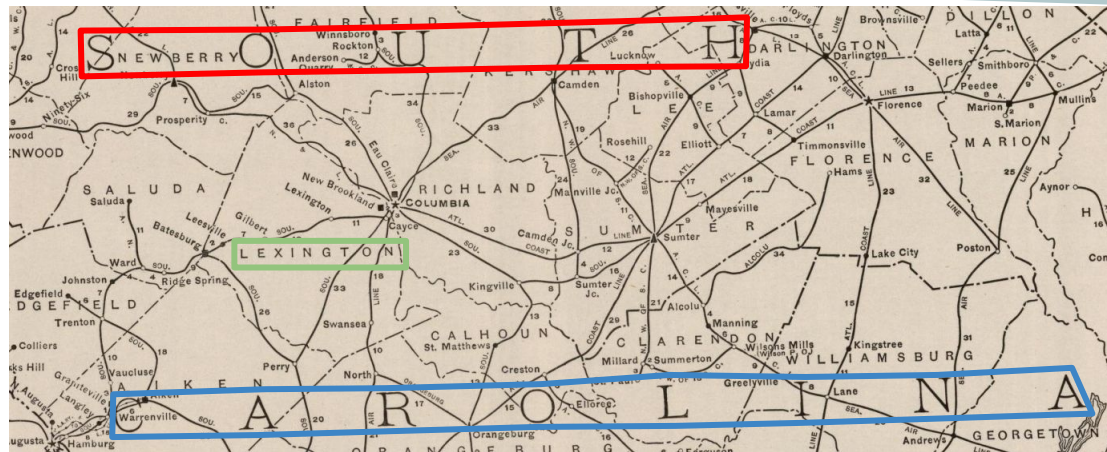
+ Map content challenges

- Erased, damaged, altered, sometimes handwritten content
- Hierarchical structure
- Many overlappings, large letter spacing, dense content, various orientations
- Contextual interpretation can be necessary
- Open lexicon (forgotten places, deprecated spellings...) 👉
- ...



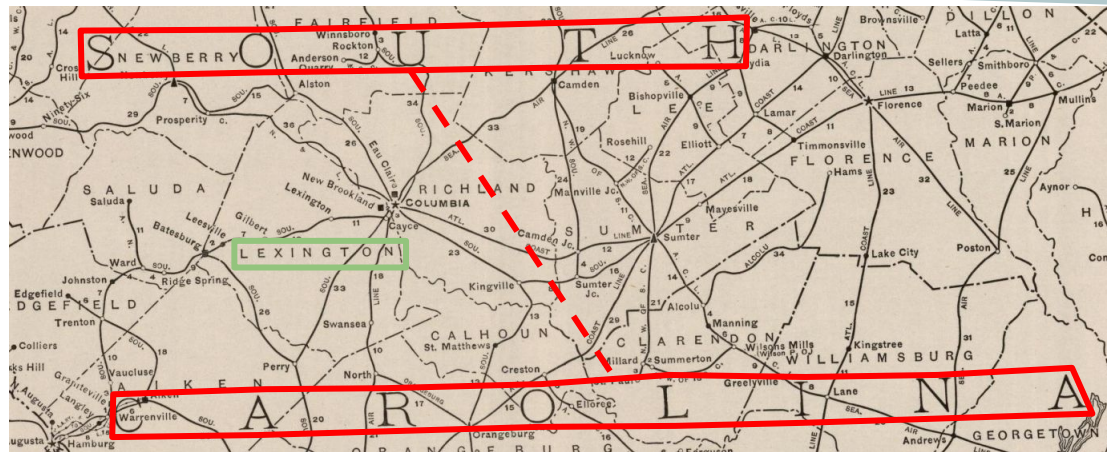
Competition tasks

1. Detection →



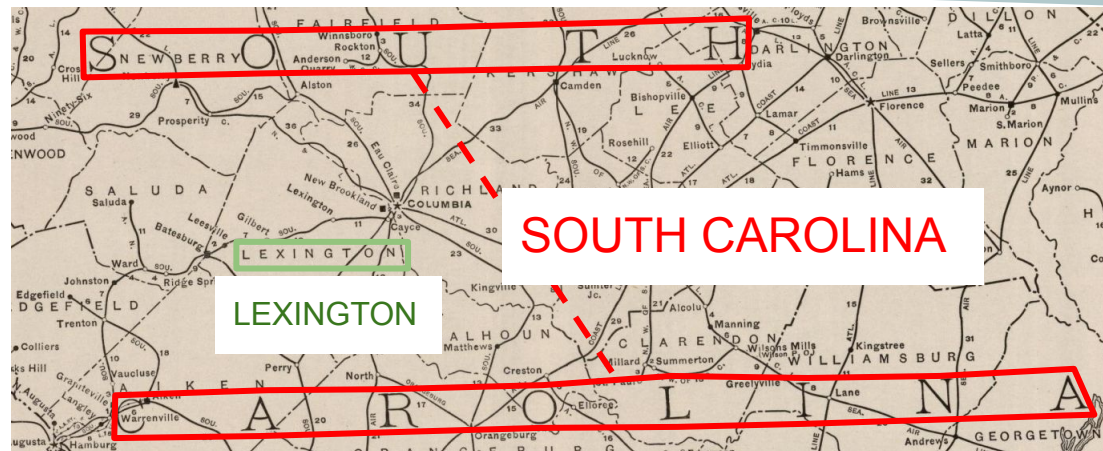
Competition tasks

1. Detection
2. Linking



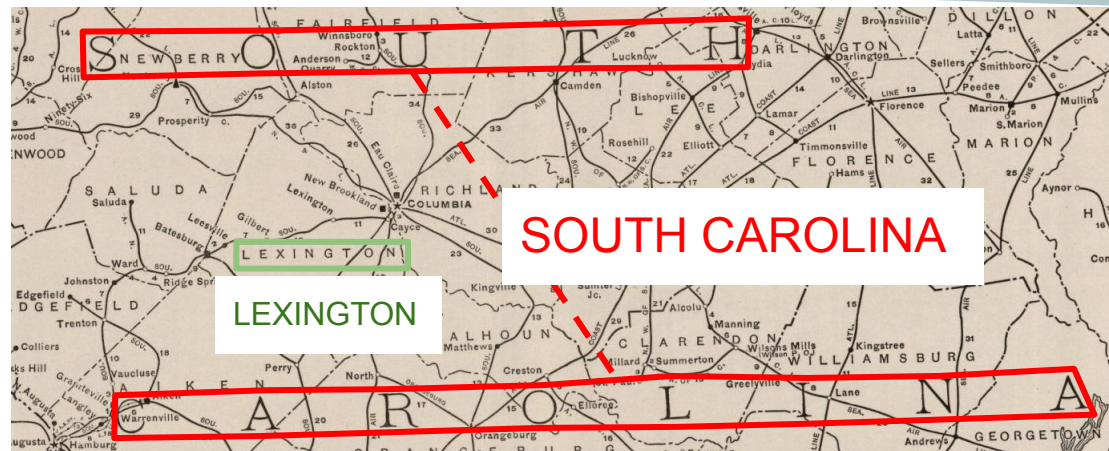
Competition tasks

1. Detection
2. Linking
3. Recognition →



Competition tasks

1. Detection
2. Linking
3. Recognition



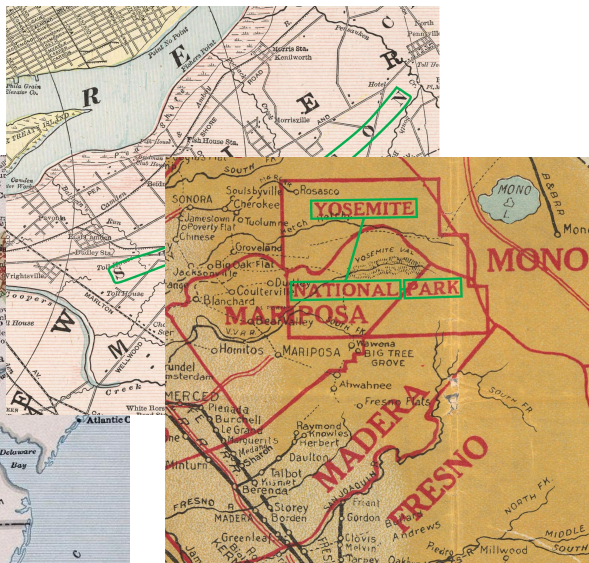
Organized as follows during the competition:

Task Name	Word Detection	Word Transcription	Word Linking
1: Word Detection	✓		
2: Phrase Detection (Word Grouping)	✓		✓
3: Word Detection and Recognition	✓	✓	
4: Phrase Detection and Recognition	✓	✓	✓

Datasets

Rumsey

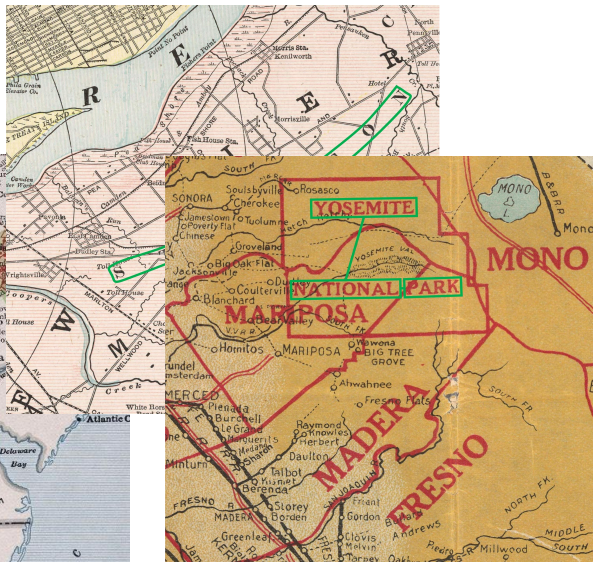
- Diverse and rigorously sampled
- Larger
- Typeset



Datasets

Rumsey

- Diverse and rigorously sampled
- Larger
- Typeset



French land registers

- Consistent corpus
- Smaller
- Handwritten



Metrics and Competition logistics

Metric contribution: Optimal assignment (pred. \leftrightarrow GT) during evaluation

see the code at <https://github.com/icdar-maptext/evaluation>

Timeline

- Participants had 3 months to prepare their systems
- and 2 months process the test set

Rules

- Participants submitted their predictions but not their systems
- They could use any training data not containing the test set

Participation

- 8 teams
- 44 submissions among all tasks

The competition is still ongoing

The online platforms accepts **post-competition submissions**.

<https://rrc.cvc.uab.es/?ch=28>

Test set targets remain secret to ensure fair comparison.

Check our **code and dataset** at

<https://zenodo.org/communities/icdar-maptext>




and <https://github.com/icdar-maptext>

Stay tuned for the **next edition**:

- detection performance is pretty good
- but linking and recognition have a large room for improvement

Winners / prizes: 4 awards

 **We thank and congratulate all participants!**

1.  Joint First Place for Leading Performance
2.  Joint First Place for Leading Performance
3.  Third Place for Great Detection Performance in Task 1
4. Fourth Place for a Promising Linking and Transcription Approach

Certificate of Achievement

ICDAR 2024 Competition on *Historical Map Text Detection, Recognition, and Linking*

This certifies that the method named

MapTest

by **Hongen Liu**

from **Tianjin University, China**

has achieved



Joint First Place for Leading Performance



We congratulate and commend **Tianjin University's team** for their exemplary contribution to the field of historical map text detection, recognition, and linking. **They participated in all tasks on both datasets and achieved the best overall performance among all participants.** The achievement is publicly verifiable on the competition's official leaderboard, showcasing both in-competition and post-competition participants, accessible at <https://rrc.cvc.uab.es/?ch=28>.

Certificate of Achievement

ICDAR 2024 Competition on *Historical Map Text Detection, Recognition, and Linking*

This certifies that the method named

MapText Detection Strong Pipeline

by Yu Xie, Jielei Zhang, Ziyue Wang, Yuchen He, Yihan Meng, Weihang Wang, Peiyi Li and Longwen Gao
from Bilibili Inc., China

has achieved



Joint First Place for Leading Performance



We congratulate and commend **Bilibili Inc.'s team** for their exemplary contribution to the field of historical map text detection, recognition, and linking. **They participated in all tasks on both datasets and achieved the best overall performance among all participants.** The achievement is publicly verifiable on the competition's official leaderboard, showcasing both in-competition and post-competition participants, accessible at <https://rrc.cvc.uab.es/?ch=28>.

Certificate of Achievement

ICDAR 2024 Competition on *Historical Map Text Detection, Recognition, and Linking*

This certifies that the method named

DINO MAP

by **Rajat Kumar Singh, Himani Shrotriya, Shivshankar Reddy, Himanshu Bhatt**
from **American Express**

has achieved

 **Third Place for Great Detection Performance in Task 1** 

We congratulate and commend **American Express' team** for their exemplary contribution to the field of historical map text detection, recognition, and linking. **They participated in Task 1, ranking 1st and 2nd for the French Land Registers and Rumsey datasets, respectively.** The achievement is publicly verifiable on the competition's official leaderboard, showcasing both in-competition and post-competition participants, accessible at <https://rrc.cvc.uab.es/?ch=28>.

Certificate of Achievement

ICDAR 2024 Competition on *Historical Map Text Detection, Recognition, and Linking*

This certifies that the method named

DS-LP

by **Siyuan Huang**

from **Beijing University of Posts and Telecommunications, China**

has achieved



Fourth Place for a Promising Linking and Transcription Approach



We congratulate and commend **Beijing University of Posts and Telecommunications' team** for their exemplary contribution to the field of historical map text detection, recognition, and linking. They achieved strong second-place rankings for Task 2, Task 3, and Task 4 on the **French Land Registers dataset**. The achievement is publicly verifiable on the competition's official leaderboard, showcasing both in-competition and post-competition participants, accessible at <https://rrc.cvc.uab.es/?ch=28>.