

# Research in the Acquisition Pipeline

David W. Embley

Christopher Almquist, Bill Barrett, Alan Cannaday, Robert Clawson, Jake Gehring, Doug Kennard, Tae Woo Kim, Steve Liddle, Peter Lindes, Deryle Lonsdale, Thomas Packer, Joseph Park, Pat Schone, Scott Woodfield



# Acquisition Pipeline

Strategic Planning

Field Negotiations

Field Capture

HQ Image & Metadata Ingest

Image Auditing

Cataloging

Collection Treatment

Waypointing

Book Scanning

Oral History Recording

Indexing

Post-Processing/Quality Control

Load to Search Engine, Publish



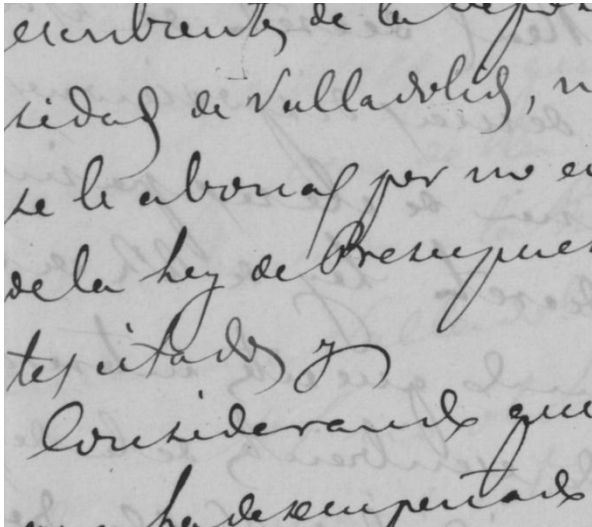
# Field Capture: Blur Detection

(Alan Cannaday)



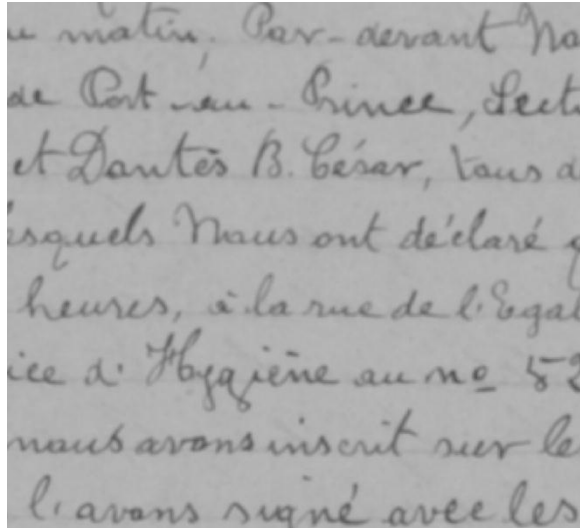
# Field Capture: Blur Detection

Sharp/Focused



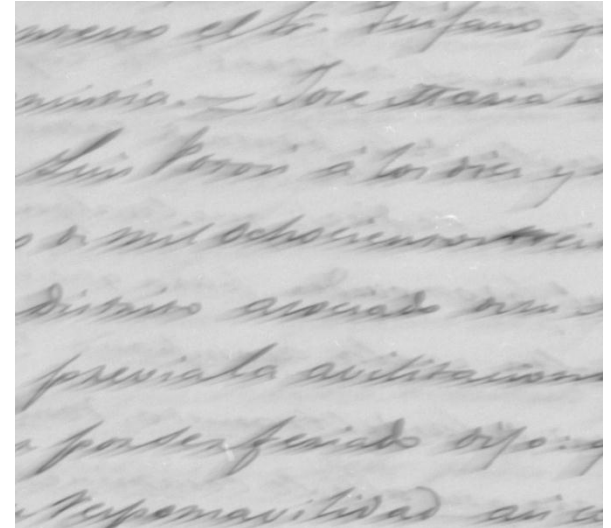
exemples de la repa  
sidad de Valladolid, n  
se le abonaf por me  
de la ley de Preserque  
tes citados y  
Considerando que  
ha de suspentado

Out of Focus



le matin, Par-devant Nos  
de Port-au-Prince, Secti  
et Dantes B. César, vous de  
esquels Nous ont déclaré q  
heures, à la rue de l'Égal  
ice d'Hygiène au n<sup>o</sup> 52  
nous avons inscrit sur les  
l'avons signé avec les

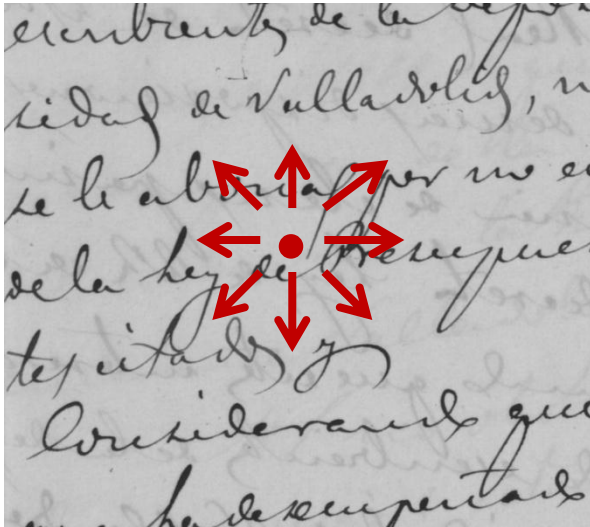
Motion Blur



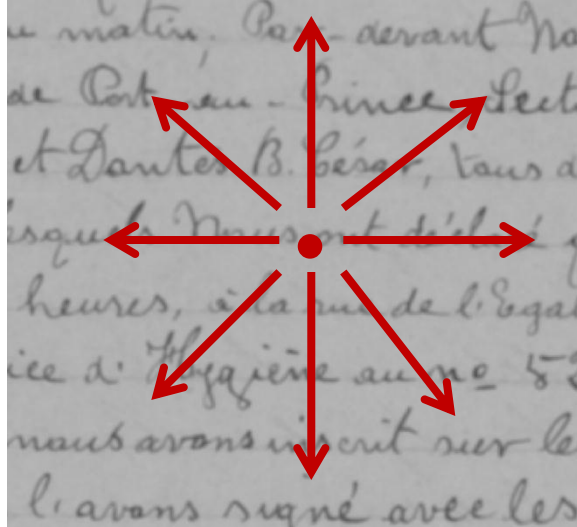
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previata avilitacion  
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# Field Capture: Blur Detection

Sharp/Focused



Out of Focus



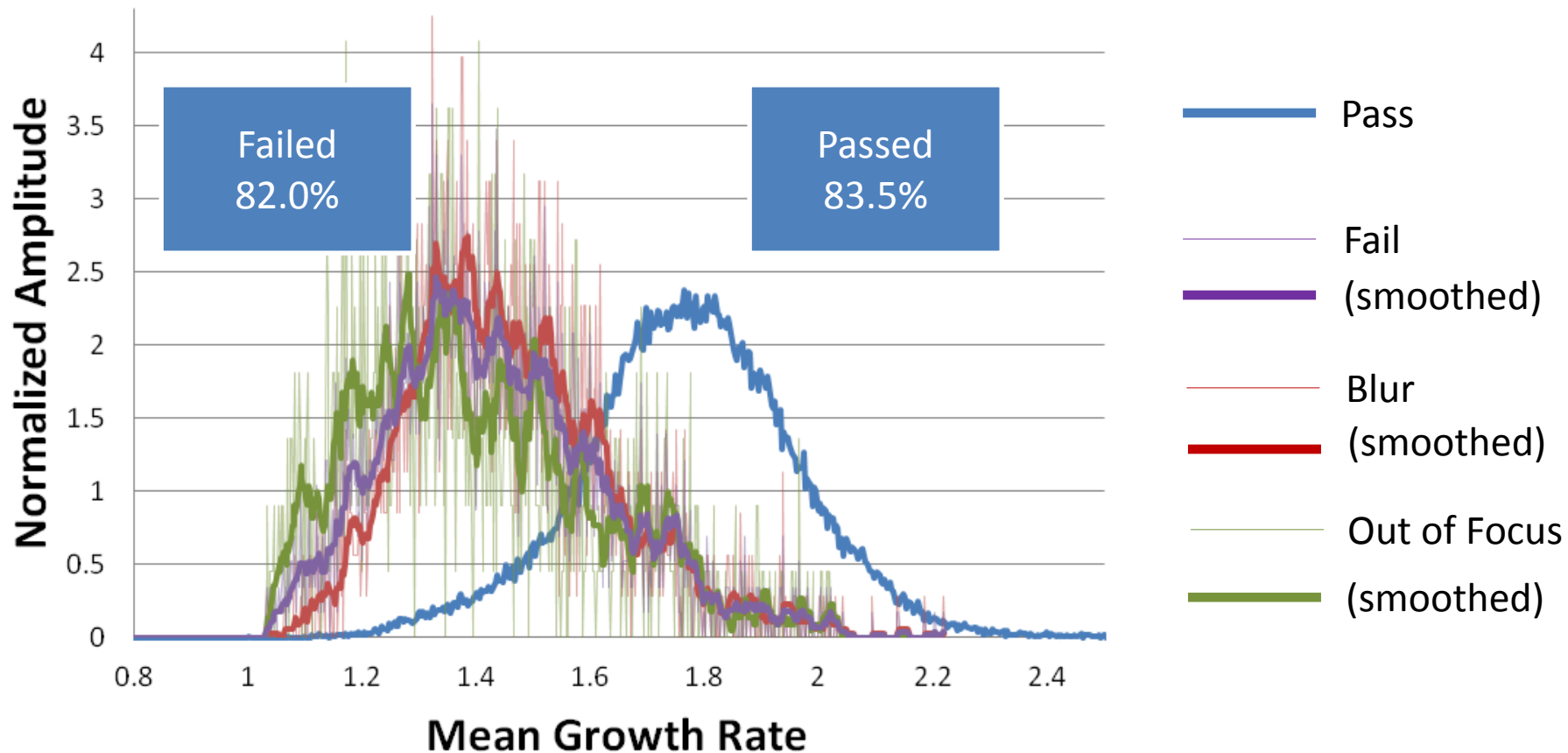
*"More than two transitional pixels between the edge of a high contrast line and the background."*

Motion Blur

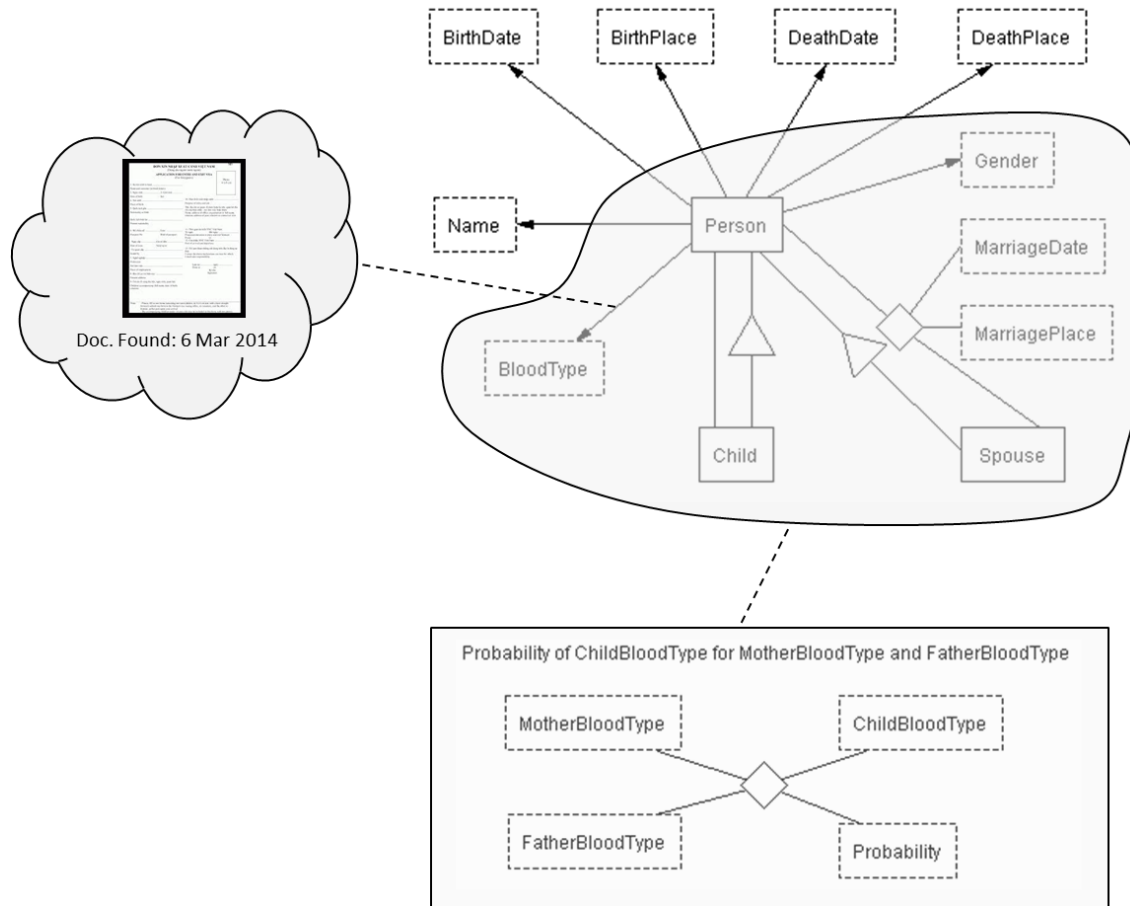


*"Transitional pixels in a single direction exceed one pixel."*

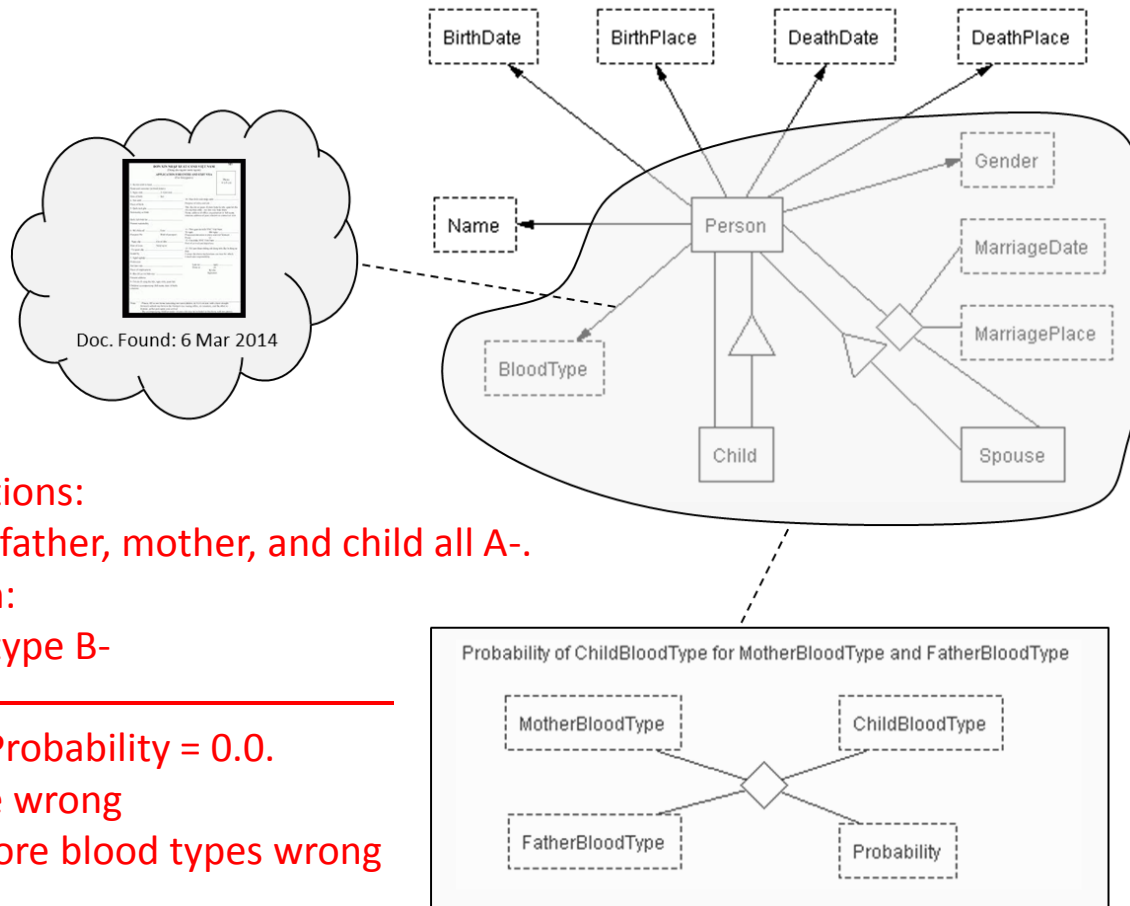
# Field Capture: Blur Detection



# Load to Search Engine: Constraint Satisfaction (Scott Woodfield)



# Load to Search Engine: Constraint Satisfaction (Scott Woodfield)



Existing assertions:

Blood type of father, mother, and child all A-.

New assertion:

Child's blood type B-

---

Conclusions: Probability = 0.0.

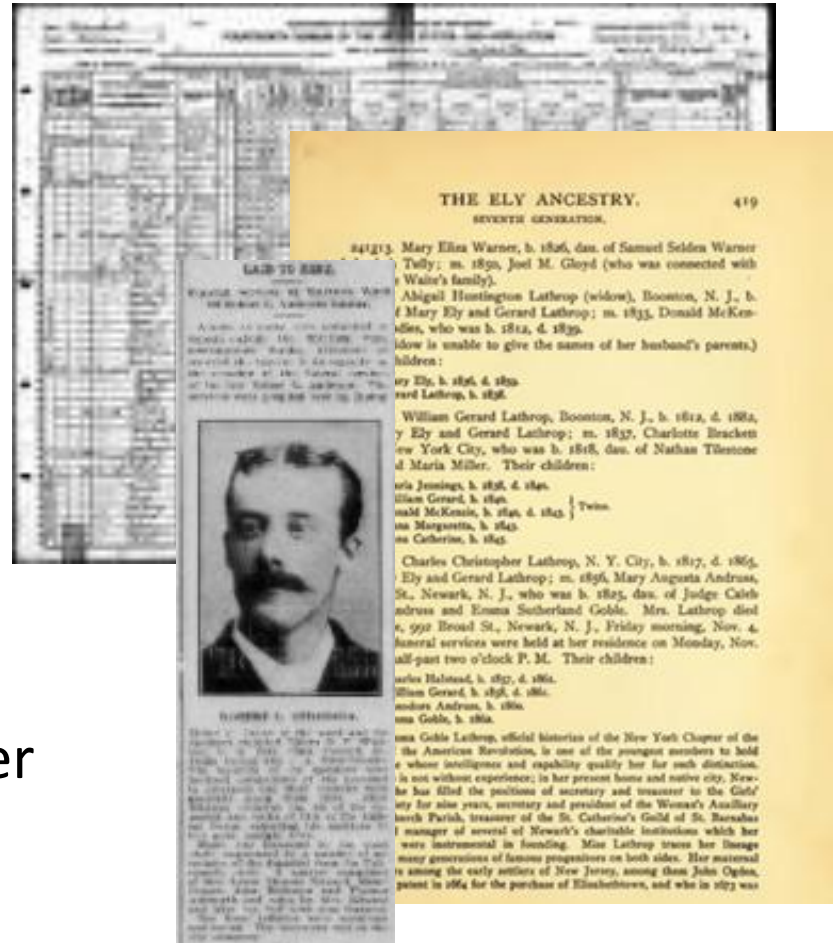
(1) Parentage wrong

(2) One or more blood types wrong

# Automated “Green” Indexing

“Green”: improves with use—learns from user interaction

- Intelligent Indexing
- “Click” Annotator
- GreenFIE-HD
- Obituaries (100M+)
  - FROntIER
  - Machine Learning
- Scanned Books (100K+)
  - ListReader
  - FormReader/TableReader
  - OntoSoar
- GreenFIE-HD<sup>++</sup>



# “Green” Intelligent Indexing

(Robert Clawson, Doug Kennard, ..., Bill Barrett)

Intelligent Indexing

File Edit View Preferences Admin Help

whose place of abode on 1920, was in this family.  
 then the given name and middle initial, if any.  
 a living on January 1, 1920. Omit those since January 1, 1920.

5	6	7	8	9	10	11	12	13	14	15	16	17
	Relationship of this person to the head of the family.	Home owned or rented.	If owned, free or mortgaged.	Sex.	Color or race.	Age at last birthday.	Single, married, widowed, or divorced.	Year of immigration to the United States.	Naturalized or alien.	If naturalized, year of naturalization.	Attended school any time since Sept. 1, 1918.	Whether able to read.
rd John P.	Head	1	0	M	W	42	M		✓			Yes
Lavinia	Wife			F	W	40	M					Yes
Horace B.	Son			M	W	17	S				Yes	Yes
James E.	Son			M	W	15	S				Yes	Yes
Beard G.	Son			M	W	13	S				Yes	Yes
Homer L.	Son			M	W	11	S				Yes	Yes
John J.	Son			M	W	7	S				Yes	
Lared	Daughter			F	W	4 3/4	S					
Lavinia	Daughter			F	W	1 3/4	S					
av Carl	Hired man			M	W	39	S	1889	Nov	1917		Yes
Orion H.	Head	1	0	M	W	29	M					Yes

# “Green” Intelligent Indexing

Benson Martha	Head	1	Q	M
— Ed	Daughter			
—	Son			
Wright Joe	Head	1	Q	F
— Lu	Wife			
— He	Daughter			
— Mildred	Daughter			
— Rudon	Son			
— Joseph	Son			
— Lula	Daughter			
— Loyale	Son			
Monsen Sophia	Head	1	Q	F

Enter field label:

son

Son
Son
Son

# “Green” Intelligent Indexing

Benson Martha	Head	Q	M
— Effie	Daughter		
—	Son		
Wright Joe	Head	Q	F
—	Wife		
—	Daughter		
— Mil	Daughter		
—	Son		
— Joseph	Son		
— Lula	Daughter		
— Loyale	Son		
Monsen Sophia	Head	Q	F

Enter field label:

Head |  
 Head |  
 Head |  
 Head |

# “Green” Intelligent Indexing

Utah		Utah
Utah		Utah
Utah		Utah
Utah		Utah
Denmark		
Utah		
Utah		
Utah		
Utah		
Utah		Utah
Utah		Utah
Idaho		Utah
Utah		Utah

Are the following also Utah? (y/n)

Utah	Utah
Utah	Utah
Utah	Utah
Utah	Utah
Utah	Utah

# Annotator (Christopher Almquist, ..., Steve Liddle)

My Drive - Google D x

Annotator x

dithers.cs.byu.edu/annotator.fh/edit.php?type=form&id=4

Apps
Calendar
My Drive - Goo...
Inbox - embley...
Annotator
Annotator2
Annotator (fhtr...
Annotator (fh)
Annotator.ca
ling240Annotator
FamilySearch.org
ER Web Site
Zions Bank - W...

Form Builder/Annotator
Home
Form Builder
Logout

Person

Father

Mother

Child

Samuel Selden Warner	Azubah Tully	Mary Eliza Warner	✕
Gerard Lathrop	Mary Ely	Abigail Ely and Lathro	✕
Donald McKen-zie	Abigail Huntington Lat	Mary Ely	✕
		Gerard Lathrop	
Gerard Lathrop	Mary Ely	William Gerard Lathro	✕
Nathan Tilestone Jenn	Maria Miller	Charlotte Brackett Jen	✕
William Gerard Lathro	Charlotte Brackett Jen	Maria Jennings	✕
		William Gerard	
		Donald McKenzie	
		Anna Margaretta	
		Anna Catherine	
			✕

Display Mode: Grid

Switch

Add Record

Upload

Existing

←

of #

→

⚙

⏮

⏭

THE ELY ANCESTRY.

419

SEVENTH GENERATION.

241213. Mary Eliza Warner, b. 1826, dau. of Samuel Selden Warner and Azubah Tully; m. 1850, Joel M. Gloyd (who was connected with Chief Justice Waite's family).

243311. Abigail Huntington Lathrop (widow), Boonton, N. J., b. 1810, dau. of Mary Ely and Gerard Lathrop; m. 1835, Donald McKenzie, West Indies, who was b. 1812, d. 1839.  
(The widow is unable to give the names of her husband's parents.)  
Their children:

1. Mary Ely, b. 1836, d. 1859.
2. Gerard Lathrop, b. 1838.

243312. William Gerard Lathrop, Boonton, N. J., b. 1812, d. 1882, son of Mary Ely and Gerard Lathrop; m. 1837, Charlotte Brackett Jennings, New York City, who was b. 1818, dau. of Nathan Tilestone Jennings and Maria Miller. Their children:

1. Maria Jennings, b. 1838, d. 1840.
2. William Gerard, b. 1840.
3. Donald McKenzie, b. 1840, d. 1843.
4. Anna Margaretta, b. 1843.
5. Anna Catherine, b. 1845.

243314. Charles Christopher Lathrop, N. Y. City, b. 1817, d. 1865, son of Mary Ely and Gerard Lathrop; m. 1856, Mary Augusta Andruss, 992 Broad St., Newark, N. J., who was b. 1825, dau. of Judge Caleb Halstead Andruss and Emma Sutherland Goble. Mrs. Lathrop died at her home, 992 Broad St., Newark, N. J., Friday morning, Nov. 4, 1898. The funeral services were held at her residence on Monday, Nov. 7, 1898, at half-past two o'clock P. M. Their children:

1. Charles Halstead, b. 1857, d. 1861.
2. William Gerard, b. 1858, d. 1861.

# Annotator (Christopher Almquist, ..., Steve Liddle)

The screenshot displays the Annotator web application interface. The browser window shows the URL `dithers.cs.byu.edu/annotator.fh/edit.php?type=form&id=4`. The application has a navigation bar with links for "Form Builder/Annotator", "Home", "Form Builder", and "Logout".

**Person Form (Left Panel):**

- Person:**
  - Father:** Samuel Selden Warner, Gerard Lathrop, Donald McKen-zie, Gerard Lathrop, Nathan Tilestone Jenn, William Gerard Lathrop.
  - Mother:** Azubah Tully, Mary Ely, Abigail Huntington Lath, Mary Ely, Maria Miller, Charlotte Brackett Jen.
  - Child:** Mary Eliza Warner, Abigail Ely and Lathro, Mary Ely, Gerard Lathrop, William Gerard Lathro, Charlotte Brackett Jen, Maria Jennings, William Gerard, Donald McKenzie, Anna Margaretta, Anna Catherine.

Each entry in the "Child" column has a red "X" button next to it. At the bottom of the form, there is a "Display Mode: Grid" button, a "Switch" button, and an "Add Record" button.

**Document Preview (Right Panel):**

The preview shows a document titled "THE ELY ANCESTRY. SEVENTH GENERATION." with a page number of 419. The text is as follows:

241213. Mary Eliza Warner, b. 1826, dau. of Samuel Selden Warner and Azubah Tully; m. 1850, Joel M. Gloyd (who was connected with Chief Justice Waite's family).

243311. Abigail Huntington Lathrop (widow), Boonton, N. J., b. 1810, dau. of Mary Ely and Gerard Lathrop; m. 1835, Donald McKenzie, West Indies, who was b. 1812, d. 1839. (The widow is unable to give the names of her husband's parents.) Their children:

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1. Maria Jennings, b. 1838, d. 1840.
2. William Gerard, b. 1840.
3. Donald McKenzie, b. 1840, d. 1843. } Twins.
4. Anna Margaretta, b. 1843.
5. Anna Catherine, b. 1845.

243314. Charles Christopher Lathrop, N. Y. City, b. 1817, d. 1865, son of Mary Ely and Gerard Lathrop; m. 1856, Mary Augusta Andruss, 992 Broad St., Newark, N. J., who was b. 1825, dau. of Judge Caleb Halstead Andruss and Emma Sutherland Goble. Mrs. Lathrop died at her home, 992 Broad St., Newark, N. J., Friday morning, Nov. 4, 1898. The funeral services were held at her residence on Monday, Nov. 7, 1898, at half-past two o'clock P. M. Their children:

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(Tae Woo Kim)

# “Green” Form-based Information Extraction for Historical Documents

Form Builder/Annotator

Home

Form Builder

Logout

TWK GreenFIE-HD Development Branch

Child

Name	Birth Year	Death Year	
Mary Ely	1836	1859	X
Gerard Lathrop	1838		X
Maria Jennings	1838	1840	X
William Gerard	1840		X
Donald McKenzie	1840	1843	X
Anna Margaretta	1843		X
Anna Catherine	1845		X

Display Mode: Grid

Switch

Add Record

GreenFIE | Save Data | Save Form | Submit Completed Work

Actions
click on token: annotate token (letters and digits only)
Alt-click on token: annotate token (letters, digits & punctuation)
mouse-select & click: annotate selected text
hold Ctrl: append annotation on click or Alt-click (⌘ for Mac)
click on field: enter edit mode
Esc: leave edit mode
hover-⌘: add a nested record
hover-⌘: remove last nested record

Keyboard Shortcuts
Tab: next field
Shift-Tab: previous field
click on field & Esc: move focus to field
1-9: add 1-9 nested fields
x: clear annotation
a: add record

Upload

Existing

573 of 830

THE ELY ANCESTRY.

SEVENTH GENERATION.

419

241213. Mary Eliza Warner, b. 1826, dau. of Samuel Selden Warner and Azubah Tully; m. 1850, Joel M. Gloyd (who was connected with Chief Justice Waite's family).

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# GreenFIE-HD: Extraction Rule Creation

Person

FirstName1	FirstName2	BirthYear	DeathYear
Maria	Jennings	1838	1840

✕

1. Maria Jennings, b. 1838, d. 1840.
  2. William Gerard, b. 1840.
  3. Donald McKenzie, b. 1840, d. 1843.
  4. Anna Margareta, b. 1843.
  5. Anna Catherine, b. 1845.
- } Twins.



$\backslash d\{1\}\backslash.\backslash s([A-Z][a-z]\{2,6\})\backslash s([A-Z][a-z]\{4,10\}),\backslash sb\backslash.\backslash s(\backslash d\{4\}),\backslash sd\backslash.\backslash s(\backslash d\{4\})\backslash.$

# GreenFIE-HD: Recall Error Resolution

Person

FirstName1	FirstName2	BirthYear	DeathYear
Charles	Halstead	1857	1861
William	Gerard	1858	1861
Emma	Goble	1862	

Display Mode: Grid

1. Charles Halstead, b. 1857, d. 1861.
2. William Gerard, b. 1858, d. 1861.
3. Theodore Andruss, b. 1860.
4. Emma Goble, b. 1862.

i860





$\backslash d\{1\}\backslash.\backslash s([A-Z][a-z]\{2,8\})\backslash s([A-Z][a-z]\{1,8\}),\backslash sb\backslash.\backslash s(\backslash d\{4\})(\backslash.|\backslash sd\backslash.\backslash s(\backslash d\{4\}))$



$\backslash d\{1\}\backslash.\backslash s([A-Z][a-z]\{2,8\})\backslash s([A-Z][a-z]\{1,8\}),\backslash sb\backslash.\backslash s(\backslash d\{4\}|i\backslash d\{3\})(\backslash.|\backslash sd\backslash.\backslash s(\backslash d\{4\}))$

# GreenFIE-HD: Precision Error Resolution

Name

Home	Journal	
William	Gerard	
Mary	Ann	
Louisa	Lathrop	

Display Mode: Grid

members from the old colonial Aldens, Brewsters, Fullers, and Elys. Home Journal, Jan. 15, 1896. 243316. Mary Cornelia Lathrop, b. 1820, d. 1879, dau. of Mary Ely and Gerard Lathrop; m. 1840, Jacob Dykeman Vermilye, 49 East 21st St., New York City, who was b. 1817, son of William Vermilye and Mary Montgomery. Their children

1. William Gerard, b. 1841.
2. Mary Ann, b. 1846.
3. Louisa Lathrop, b. 1851, d. 1853.

`\.\s([A-Z][a-z]{2,8})\s([A-Z][a-z]{1,8}),`



`\d{1}\.\.\s ([A-Z][a-z]{2,8})\s([A-Z][a-z]{1,8}),\sb\.\.\s`

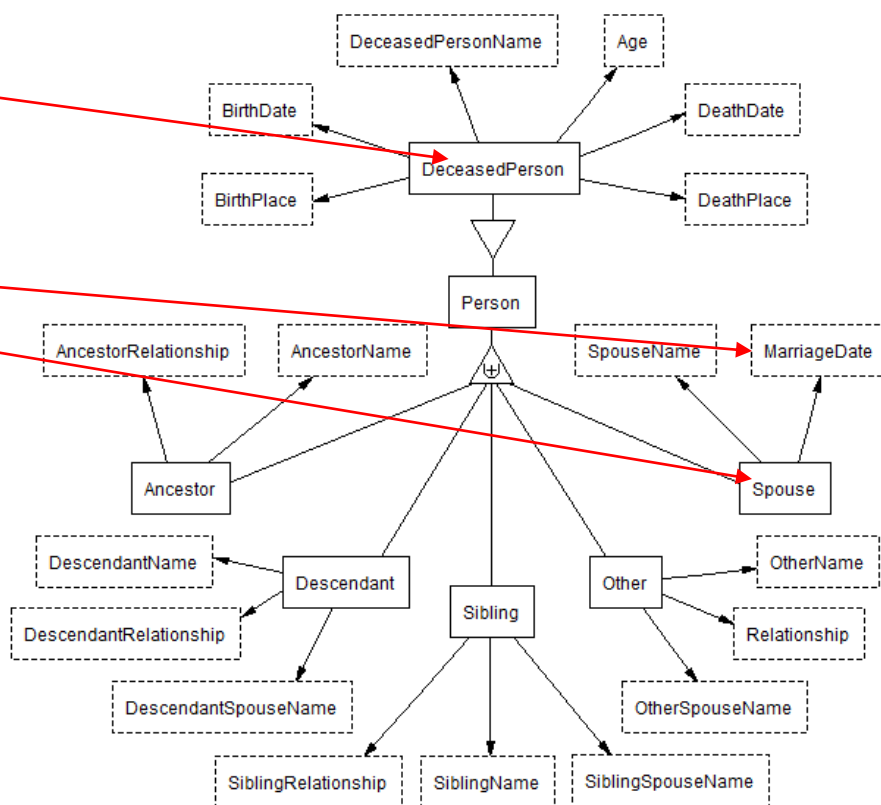
# GreenFIE-HD: Principles

- Look-ahead: automatic extraction
- Look-behind: rule derivation and adjustment
- “Green”: improves with use

# Obituaries with FROntIER (Joseph Park)

(Fact Recognizer for **Ontologies** with Inference and Entity Resolution)

Brian Fielding Frost  
Our beloved Brian Fielding Frost, age 41, passed away Saturday morning, March 7, 1998, due to injuries sustained in an automobile accident. He was born August 4, 1956 in Salt Lake City, to Donald Fielding and Helen Glade Frost. He married Susan Fox on June 1, 1981. He is survived by Susan; sons Jordan (9), Travis (8), Bryce (6); parents, three brothers, Donald Glade (Lynne), Kenneth Wesley (Ellen), Alex Reed, and two sisters, Anne (Dale) Elkins and Sally (Kent) Britton. A son, Michael Brian Frost, preceded him in death. Funeral services will be held at 12 noon Friday, March 13, 1998 in the Howard Stake Center, 350 South 1600 East. Friends may call 5-7 p.m. Thursday at Wasatch Lawn Mortuary, 3401 S. Highland Drive, and at the Stake Center from 10:45-11:45 a.m. Friday. Interment at Wasatch Lawn Memorial Park.



# Obituaries with FROntIER

Brian Fielding Frost  
Our beloved Brian Fielding Frost, age 41, passed away Saturday March 7, 1998, due to injuries in an automobile accident. He was born August 4, 1956 in Salt Lake City to Donald Fielding and Helen Glade. He married Susan Fox on June 1, 1983. He is survived by Susan; sons: Brandon (9), Travis (8), Bryce (6) and three brothers, Donald Glade, Kenneth Wesley (Ellen), Alex and two sisters, Anne (Dale) Sally (Kent) Britton. A son, Brian Frost, preceded him in death. Funeral services will be held at 12 noon Friday, March 13, 1998 in the Howard Stake Center, 350 South 1600 East. Friends may call 5-7 p.m. Thursday at Wasatch Lawn Mortuary, 3401 S. Highland Drive, and at the Stake Center from 10:45-11:45 a.m. Friday. Interment at Wasatch Lawn Memorial Park.

Ontology Editor

File Edit Shape Format Tools Window Help

Ontology Snippet Editor - ObitExtrOnt.xml

Ontology Snippets

- Descendant(Son2)
- Descendant(Son3)
- Descendant(Son1)
- Descendant(Son appositive)
- born...to {Name}
- born...to...and {Name}
- Sibling(Brother1withSpouse)
- Sibling(Brother2withSpouse)
- Sibling(Brother3)
- Sibling(Sister1withSpouse)
- Sibling(Sister2withSpouse)**
- Predicate Mappings
  - Sibling-SiblingName(x1,2)
  - Sibling-SiblingRelationship(x1,1)
  - Sibling-SiblingSpouseName(x1,3)
- add new Ontology Snippet

Ontology Snippet

Delete Ontology Snippet

Name: Sibling(Sister2withSpouse)

Ontology Snippet Expression

```
\b(sister)s?,?.{1,30}?s({first})\s(\({first}\)\s{last})\b
```

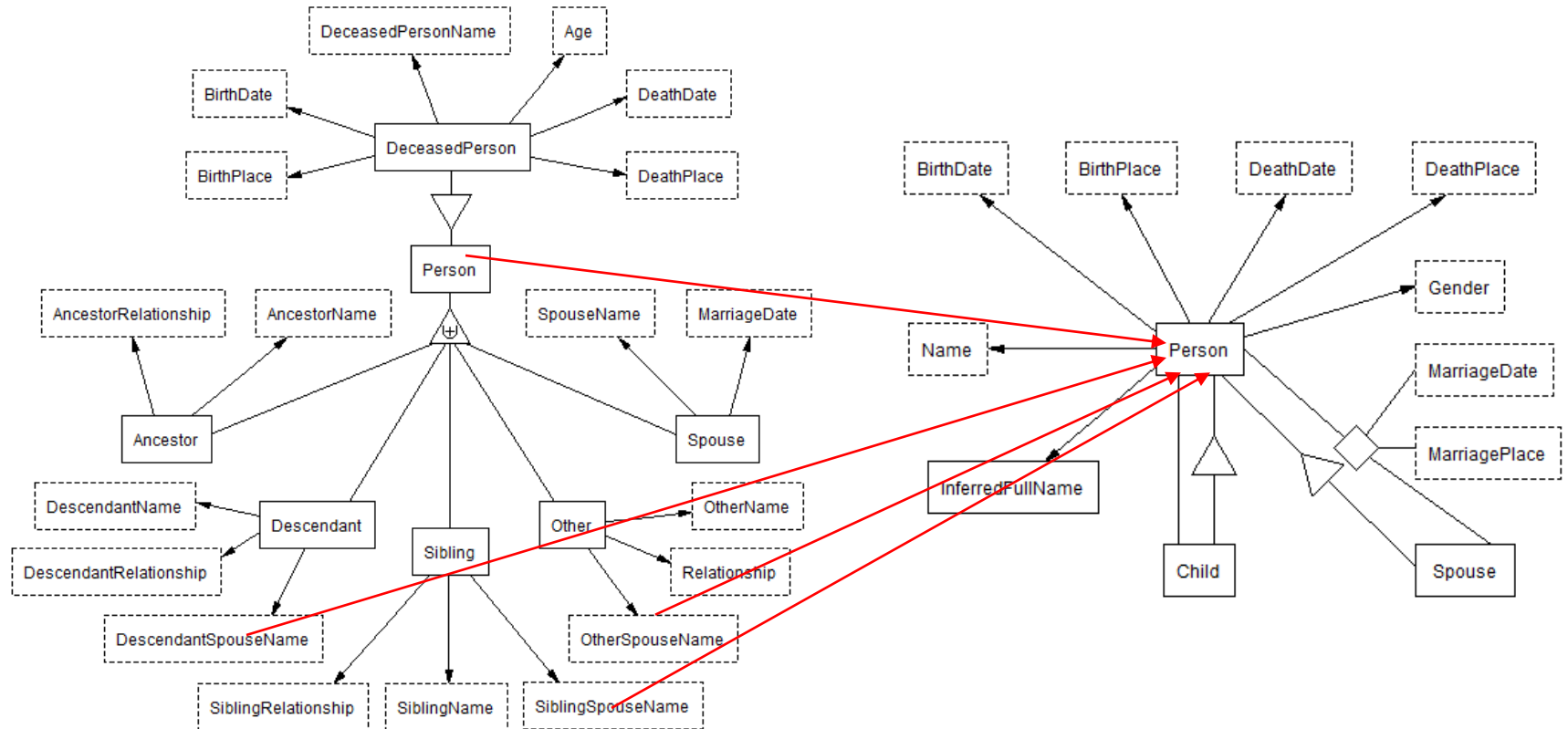
Diagram illustrating the ontology structure and relationships:

- Descendant (Class) has relationships: DescendantName, DescendantRelationship, DescendantSpouseName.
- Sibling (Class) has relationships: SiblingRelationship, SiblingName, SiblingSpouseName.
- Other (Class) has relationships: OtherName, Relationship, OtherSpouseName.

Arrows indicate mappings from the text to the ontology classes and relationships:

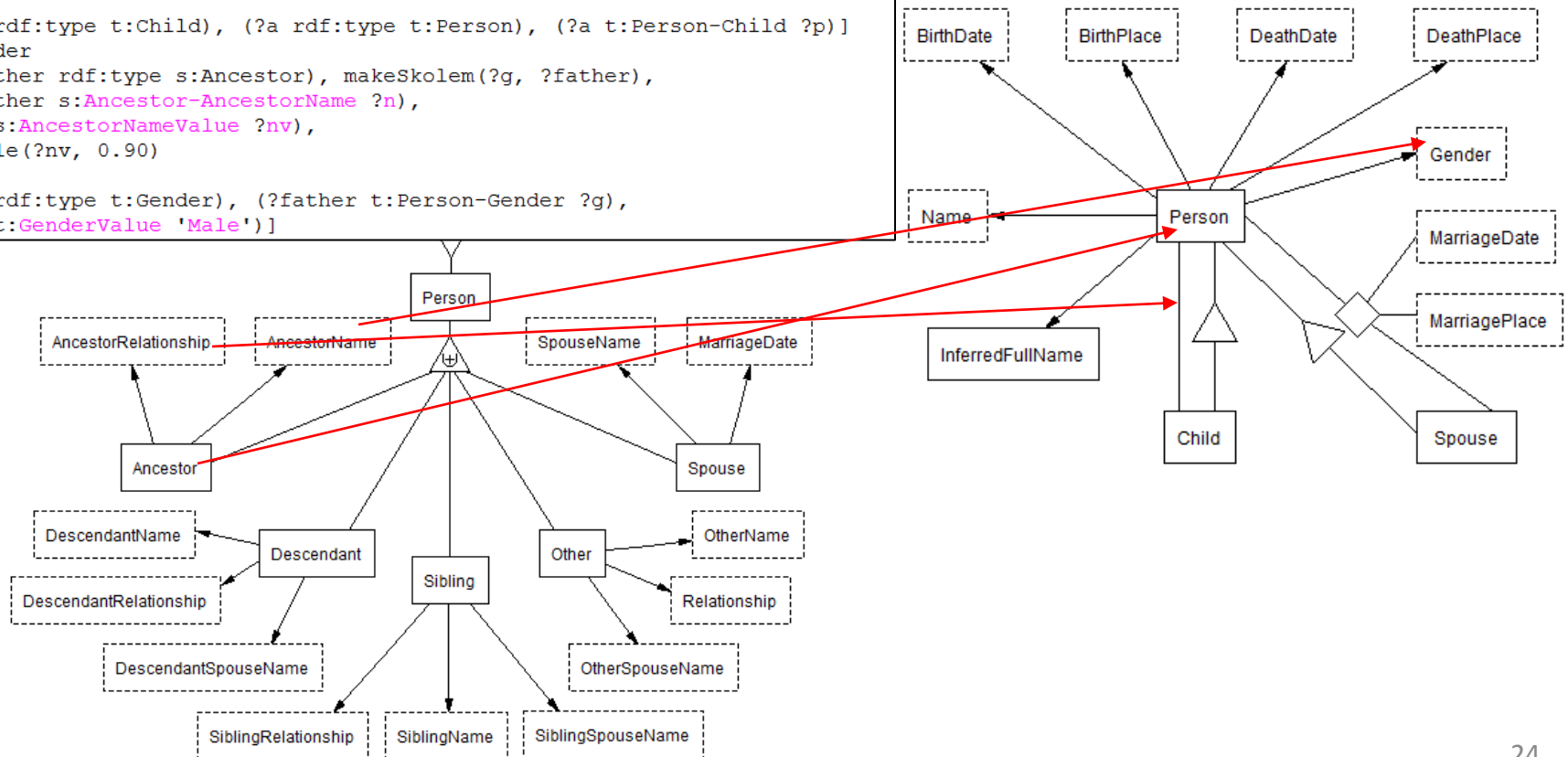
- Red arrow: "Sally (Kent) Britton" to Descendant.
- Green arrow: "Anne (Dale)" to Sibling.
- Purple arrow: "Brian Frost" to Sibling.

# Obituaries with FROntIER



# Obituaries with FROntIER

```
//Ancestor
[(?a rdf:type s:Ancestor) -> (?a rdf:type t:Person)]
//Name
[(?n rdf:type s:AncestorName) -> (?n rdf:type t:Name)]
[(?a s:Ancestor-AncestorName ?n), (?n s:AncestorNameValue ?nv)
->
  (?a t:Person-Name ?n), (?n t:NameValue ?nv)]
//Person-Child relationship for Ancestor (only for parent in this example)
[(?p rdf:type s:DeceasedPerson), (?a rdf:type s:Ancestor),
  (?a s:Ancestor-AncestorRelationship ?ar),
  (?ar s:AncestorRelationshipValue 'parent')
->
  (?p rdf:type t:Child), (?a rdf:type t:Person), (?a t:Person-Child ?p)]
//Gender
[(?father rdf:type s:Ancestor), makeSkolem(?g, ?father),
  (?father s:Ancestor-AncestorName ?n),
  (?n s:AncestorNameValue ?nv),
  isMale(?nv, 0.90)
->
  (?g rdf:type t:Gender), (?father t:Person-Gender ?g),
  (?g t:GenderValue 'Male')]
```

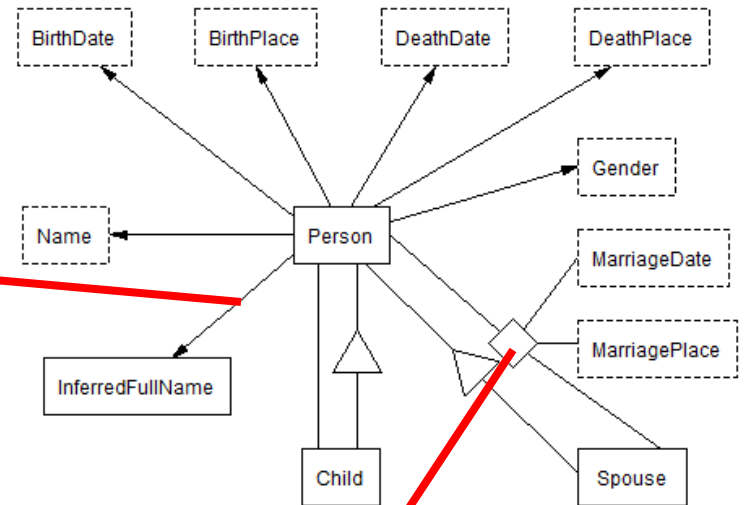


# Obituaries with FROntIER

Person[1:1] InferredFullName[1:\*]

Person	InferredFullName
osmx68	Ellen Frost
osmx72	Travis Frost
osmx99	Brian Fielding Frost
osmx107	Lynne Frost
osmx100	Kenneth Wesley Frost
osmx121	Alex Reed Frost
osmx115	Bryce Frost
osmx109	Kenneth Wesley Frost
osmx68	Ellen Frost
osmx99	Helen Glade Frost
osmx119	Travis Frost
osmx91	Susan Fox Frost
osmx161	Donald Glade Frost
osmx107	Donald Fielding Frost
osmx195	Brian Fielding Frost
osmx125	Lynne Frost
osmx113	Sally Frost Britton
osmx153	Michael Brian Frost
osmx151	Kent Britton
osmx149	Anne Frost Elkins
osmx165	Jordan Frost
osmx72	Dale Elkins

add new... Delete



Person Spouse MarriageDate MarriagePlace Pe...

Person	Spouse	MarriageDate	MarriagePlace
osmx68	osmx68	June 1, 1981	
osmx72	osmx72		
osmx99	osmx91		
osmx161	osmx125		
osmx113	osmx151		
osmx195	osmx91	June 1, 1981	
osmx109	osmx68		
osmx149	osmx72		

add new... Delete

# Obituaries with FROntIER



# Obituaries with Machine Learning

(Pat Schone)

The screenshot shows a software application window titled "C:\Users\boisebound\JavaWorkspace\fh-d-name-entity-data\DONE\_DATA\PC\_OBITS\_13K\_BYU\_Pilot.txt.UTF8.PRE.redact.autoEnamex.DONE". The main text area contains an obituary for Sami Stephens Pearson. The text is annotated with colored boxes representing different entities and relationships. A left sidebar lists entity types, and a right sidebar lists relationships. A bottom table shows extracted relations.

**Entity Types (Left Sidebar):**

- @AUTHOR
- AGE
- ANIMAL
- CHEMICAL
- COREF
- ETPLACE
- EVENT
- EVENT.rel
- EVENT.xlife
- FAMILYMEMBER
- FLORA
- GAME
- ITE.et
- ITE.gpe
- ITE.notgpe
- ITE.org
- LOCALE
- LOCALE.notgpe
- OCCUPATION
- ORGANIZATION
- ORGANIZATION.edu
- ORGANIZATION.mil
- ORGANIZATION.music
- ORGANIZATION.rel
- ORGANIZATION.sports
- PERSON
- PHYSICIAN
- STRUCTURE
- STRUCTURE.addr
- TITLE
- URL
- VEHICLE
- VEHICLE
- WORK\_OF\_ART
- MONEY
- PERCENT
- UNIT
- DATE.non
- TIME

**Relationships (Right Sidebar):**

- HAS\_STDATE
- HAS\_ST\_PL
- HAS\_ST\_TM
- HAS\_RESPL
- HAS\_ENDDATE
- HAS\_END\_PL
- HAS\_END\_TM
- HAS\_SPOUSE
- HAS\_FATHER
- HAS\_MOTHER
- IS\_SAME\_AS
- 'S\_CONTACT
- AGE\_OF
- ATTENDED
- EMPLOYED\_BY
- HASFAMMEMLIST
- HAS\_EVENT
- MEMBER\_OF
- NAMEXTRA\_OF
- OCCUPATION\_OF
- OWNS
- SUBPLACE\_OF
- TITLE\_OF

**Obituary Text:**

Sami Stephens Pearson  
May 13, 1947 ~ August 24, 2013  
Sami Stephens Pearson Our loving wife and mother went home to be with Jesus after a long battle with kidney failure.  
She left behind her husband, Jerry; two sons, Robby and Vince; and five grandchildren. She will be missed by all her friends and family.  
A Memorial Service will be held Monday, August 30, 2013, at 2 pm at North Park Foursquare Church, 4275 S 1900, Roy, Utah.  
#####  
Steven Thornton  
October 11, 2013  
Funeral services for Steven will be held Tuesday, October 15, 2013, 11:00 a.m., at the Orangeville LDS Ward Chapel (45 West 100 South) in Orangeville.  
Family will be at Mitchell Funeral Home (233 East Main Street) in Price Monday evening from 6:00-8:00 p.m. and at the church Tuesday from 9:30-10:30 a.m. prior to services.  
Interment will be in the Orangeville City Cemetery.  
#####

**Table:**

Relation	Entity1	Entity1Offset	Entity2	Entity2Offset
E1:HAS_STDATE	Kayj Shumway	00021591	November 18, 2011	00021604
E3:HAS_ENDDATE	Kayj Shumway	00021591	April 2, 2013	00021624
R40:IS_SAME_AS	Kayj Shumway	00021660	Kayj Shumway	00021591
Z:HAS_EVENT	Kayj Shumway	00021660	Funeral Services	00021639
Z:HASFAMMEMLIST	Tye	00021687	son	00021680
R00:HAS_SPOUSE	Tye	00021687	Laici Shumway	00021695
R40:IS_SAME_AS	Laici Shumway	00021695	Kayj Shumway	00021660
Z:HASFAMMEMLIST	Laici Shumway	00021695	son	00021680
Z:SUBPLACE_OF	Blanding	00021749	Utah	00021759

# Obituaries with GreenFIE-HD

## DeceasedPerson

Name	Brian Fielding Frost
Age	41
DeathDate	March 7, 1998
DeathPlace	
BirthDate	August 4, 1956
BirthPlace	Salt Lake City

Display Mode: **Standard**

### Brian Fielding Frost

Our beloved Brian Fielding Frost, age 41, passed away Saturday morning, March 7, 1998 due to injuries sustained in an automobile accident. He was born August 4, 1956 in Salt Lake City, to Donald Fielding and Helen Glade Frost. He married Susan Fox on June 1, 1981. He is survived by Susan; sons Jordan (9), Travis (8), Bryce (6); parents, three brothers, Donald Glade (Lynne), Kenneth Wesley (Ellen), Alex Reed, and two sisters, Anne (Dale) Elkins and Sally (Kent) Britton. A son, Michael Brian Frost, preceded him in death. Funeral services will be held at 12 noon Friday, March 13, 1998 in the Howard Stake Center, 350 South 1600 East. Friends may call 5-7 p.m. Thursday at Wasatch Lawn Mortuary, 3401 S. Highland Drive, and at the Stake Center from 10:45-11:45 a.m. Friday. Interment at Wasatch Lawn Memorial Park.

# ListReader (Thomas Packer)

1555. Elias Mather, b. 1750, d. 1788, son of Deborah Ely and Richard Mather; m. 1771, Lucinda Lee, who was b. 1752, dau. of Abner Lee and Elizabeth Lee. Their children:—

1. Andrew, b. 1772.
2. Clarissa, b. 1774.
3. Elias, b. 1776.
4. William Lee, b. 1779, d. 1802.
5. Sylvester, b. 1782.
6. Nathaniel Griswold, b. 1784, d. 1785.
7. Charles, b. 1787.

1556. Deborah Mather, b. 1752, d. 1826, dau. of Deborah Ely and Richard Mather; m. 1771, Ezra Lee, who was b. 1749 and d. 1821, son of Abner Lee and Elizabeth Lee. Their children:—

1. Samuel Holden Parsons, b. 1772, d. 1870, m. Elizabeth Sullivan.
2. Elizabeth, b. 1774, d. 1851, m. 1801 Edward Hill.
3. Lucia, b. 1777, d. 1778.
4. Lucia Mather, b. 1779, d. 1870, m. John Marvin.
5. Polly, b. 1782.
6. Phebe, b. 1783, d. 1805.
7. William Richard Henry, b. 1787, d. 1796.
8. Margaret Stoutenburgh, b. 1794.

# ListReader

1555. Elias Mather, b. 1750, d. 1788, son of Deborah Ely and Richard Mather; m. 1771, Lucinda Lee, who was b. 1752, dau. of Abner Lee and Elizabeth Lee. Their children:—

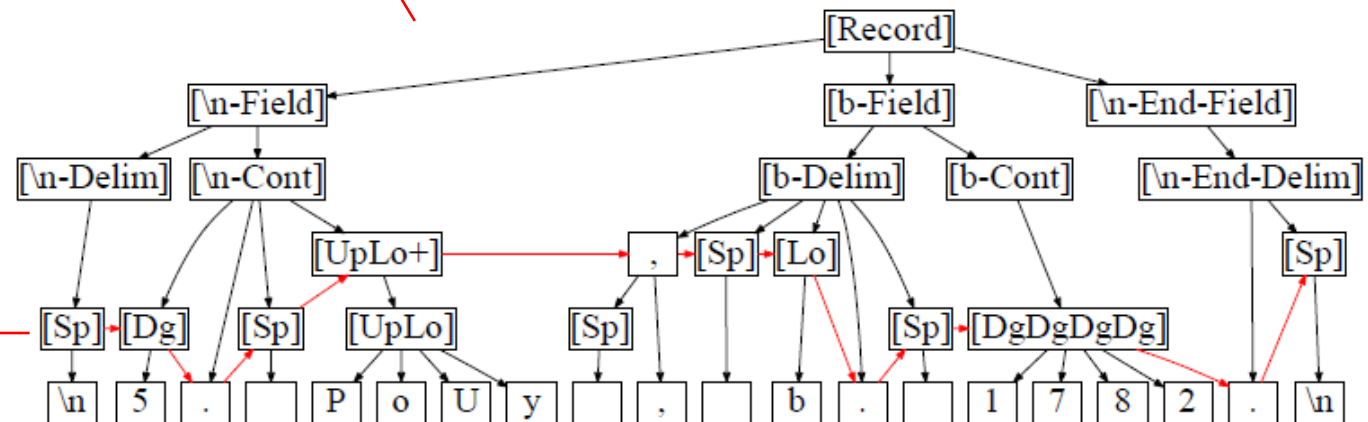
- |  |  |
|--|--|
| 1. Andrew, b. 1772.                      | — "\n1. Andrew, b. 1772.\n"                |
| 2. Clarissa, b. 1774.                    | — "\n2. Clarissa, b. 1774.\n"              |
| 3. Elias, b. 1776.                       | — "\n3. Elias, b. 1776.\n"                 |
| 4. William Lee, b. 1779, d. 1802.        | — "\n5. Polly, b. 1782.\n"                 |
| 5. Sylvester, b. 1782.                   | — "\n5. Sylvester, b. 1782.\n"             |
| 6. Nathaniel Griswold, b. 1784, d. 1785. | — "\n7. Charles, b. 1787.\n"               |
| 7. Charles, b. 1787.                     | — "\n8. Margaret Stoutenburgh, b. 1794.\n" |

1556. Deborah Mather, b. 1752, d. 1826, dau. of Deborah Ely and Richard Mather; m. 1771, Ezra Lee, who was b. 1749 and d. 1821, son of Abner Lee and Elizabeth Lee. Their children:—

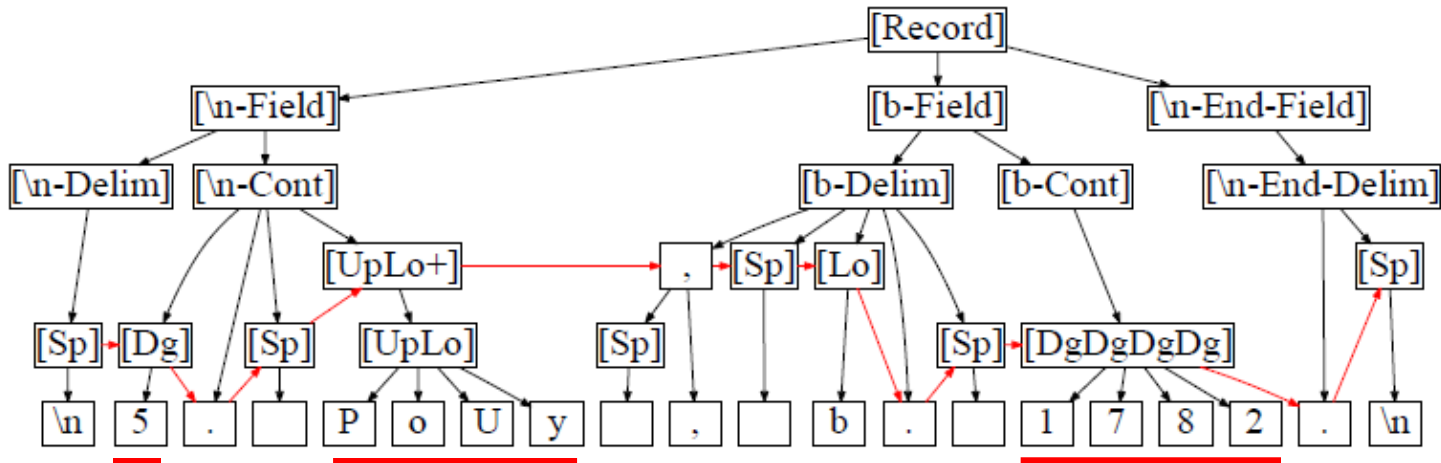
- |  |   |
|--|---|
| 1. Samuel Holden Parsons, b. 1772, d. 1870, m. Elizabeth Sullivan. | — "\n4. William Lee, b. 1779, d. 1802.\n"           |
| 2. Elizabeth, b. 1774, d. 1851, m. 1801 Edward Hill.               | — "\n6. Nathaniel Griswold, b. 1784, d. 1785.\n"    |
| 3. Lucia, b. 1777, d. 1778.  | — "\n3. Lucia, b. 1777, d. 1778.\n"                 |
| 4. Lucia Mather, b. 1779, d. 1870, m. John Marvin.                 | — "\n6. Phebe, b. 1783, d. 1805.\n"                 |
| 5. Polly, b. 1782.   | — "\n7. William Richard Henry, b. 1787, d. 1796.\n" |
| 6. Phebe, b. 1783, d. 1805.  |   |
| 7. William Richard Henry, b. 1787, d. 1796.                        |   |
| 8. Margaret Stoutenburgh, b. 1794.                                 |   |

# ListReader

— [Sp] [Dg] . [Sp] [UpLo+] , [Sp] [Lo] . [Sp] [DgDgDgDg] . [Sp]  
— “\n1. Andrew, b. 1772.\n”  
— “\n2. Clarissa, b. 1774.\n”  
— “\n3. Elias, b. 1776.\n”  
~~— “\n5. Polly , b. 1782.\n”~~  
— “\n5. Sylvester, b. 1782.\n”  
— “\n7. Charles, b. 1787.\n”  
— “\n8. Margaret Stoutenburgh, b. 1794.\n”  
— [Sp] [Dg] . [Sp] [UpLo+] , [Sp] [Lo] . [Sp] [DgDgDgDg] , [Sp] [Lo] . [Sp] [DgDgDgDg] . [Sp]  
— “\n4. William Lee, b. 1779, d. 1802.\n”  
— “\n6. Nathaniel Griswold, b. 1784, d. 1785.\n”  
— “\n3. Lucia, b. 1777, d. 1778.\n”  
— “\n6. Phebe, b. 1783, d. 1805.\n”  
— “\n7. William Richard Henry, b. 1787, d. 1796.\n”



# ListReader



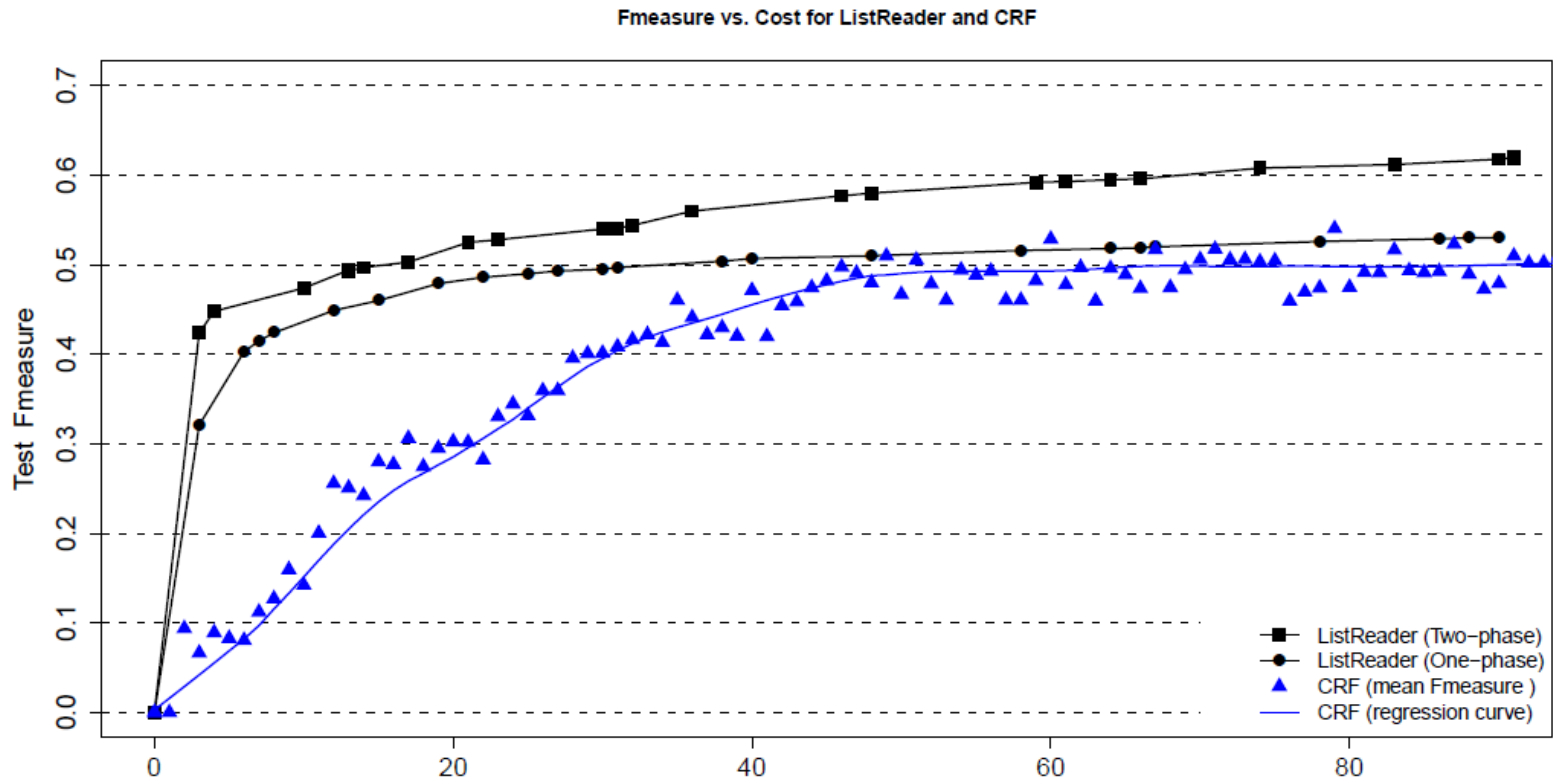
(([\n]))(([\d]{1}))(([\. [\n]]))((([A-Z]+[a-z]+|[A-Z]+[a-z]+[A-Z]+[a-z]+)))((,[ ]))(([\n]))(([\d]{4}))((([\.])(([\n])))

??	
??	<input type="text" value="5"/>
??	<input type="text" value="PoUy"/>
??	<input type="text" value="1782"/>

Label Fields →

<b>Person</b>	
ChildNr	<input type="text" value="5"/>
Name	<input type="text" value="PoUy"/>
BirthDate	<input type="text" value="1782"/>

# ListReader (Thomas Packer)



# FormReader

GENERAL DECLARATION (Outward/Inward)			
AGRICULTURE, CUSTOMS, IMMIGRATION, AND PUBLIC HEALTH			
Owner or Operator NATIONAL AERONAUTICS AND SPACE ADMINISTRATION			
Marks of Nationality and Registration U.S.A.	Flight No. APOLLO 11	Date JULY 24, 1969	
Departure from MOON (Place and Country)	Arrival at HONOLULU, HAWAII, U.S.A. (Place and Country)		
FLIGHT ROUTING (“Place” Column always to list origin, every en-route stop and destination)			
PLACE	TOTAL NUMBER OF CREW	NUMBER OF PASSENGERS ON THIS STAGE	CARGO
CAPE KENNEDY	COMMANDER NEIL A. ARMSTRONG		
MOON	<i>[Signature]</i>	Departure Place:	
JULY 24, 1969 HONOLULU	COLONEL EDWIN E. ALDRIN, JR. <i>[Signature]</i>	Embarking NIL Through on same flight NIL	MOON ROCK AND MOON DUST SAMPLES Cargo Manifests Attached
	<i>[Signature]</i> —LT. COLONEL MICHAEL COLLINS	Arrival Place: Disembarking NIL Through on same flight NIL	
Declaration of Health		For official use only	
Persons on board known to be suffering from illness other than sickness or the effects of accidents, as well as those cases of illness disembarked during the flight:  NONE		<p>HONOLULU AIRPORT Honolulu, Hawaii ENTERED</p> <p><i>[Signature]</i> Customs Inspector</p>	
Any other condition on board which may lead to the spread of disease:  TO BE DETERMINED			
Details of each disinfecting or sanitary treatment (place, date, time, method) during the flight. If no disinfecting has been carried out during the flight give details of most recent disinfecting:			
Signed, if required Crew Member Concerned			
I declare that all statements and particulars contained in this General Declaration, and in any supplementary forms required to be presented with this General Declaration are complete, exact and true to the best of my knowledge and that all through passengers will continue to have continued on the flight.			

1921 - 1 JUN 1921

SCANDINAVIAN Class 1st Date of Entry 1 JUN 1921

DECLARATION OF PASSENGER TO CANADA

NAME FERN EDWARD

Sex Male Are you married, single, widowed or divorced? Single

If married, are you accompanied by husband or wife? If so, give name of husband or wife

Present occupation Old school Intended occupation Farm Work

Birthplace London Race or people English

Citizenship British Religion Protestant

Object in going to Canada To do farming

Do you intend to remain permanently in Canada? Yes

Have you ever lived in Canada? No

Port of previous entry Date

Port of departure from Canada Date

Why did you leave Canada?

Money in possession belonging to passenger

If an answer that I might have on my arrival in Canada the sum of \$

Can you read? Yes What language? English

By whom was your passage paid? Dr. Barford's Home

Have refused entry to, or departed from Canada?

Destined to (Friend) Mr John W. Hobday

By which Canadian railway are you travelling to destination? C.P.R.

Passport subject to country from which you came

Mr Thomas Fern

7, Paradise Walk, Chikna, Ballymore

(Give full names of such relatives)

Are you or any of your family mentally defective? No

Physically defective? No

Otherwise declared under Canadian Immigration Law?

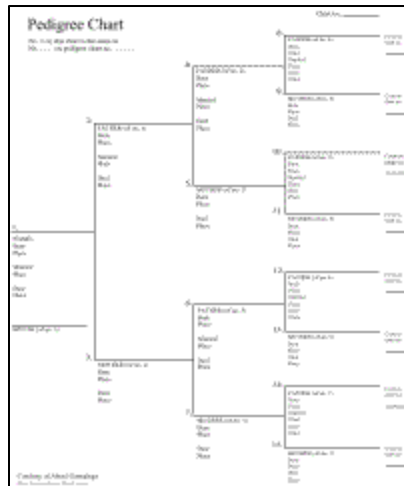
Signature of passenger Edward Fern

I hereby declare that the above is the true and correct statement of the facts of my life and of my family as far as they are known to me.

THE CANADIAN PACIFIC OCEAN SERVICES LTD.

LONDON

# ChartReader, Table Reader, ...



Jordan Frost

Travis Frost

Michael Brian Frost

Bryce Frost

Christian Fielding & Susan Fox Frost

Alexandra Frost

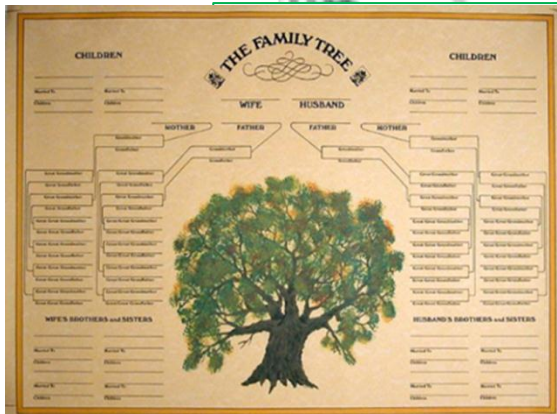
Dale & Anne Frost Elkins

Kenneth W

Kent & Sally

Lynn Frost

Michael Fielding Frost & Helen Glade Frost



A table with multiple columns and rows, likely a family record or genealogical data. The table is divided into sections for "FAMILY RECORD" and "FAMILY RECORD". It contains names, dates, and other information.

# OntoSoar (Peter Lindes, Deryle Lonsdale)

Children of JAMES HARWOOD, No. 103.

229. MYRA, born July 26, 1835, in Eden, Vt. She married ELIJAH SPENCER, Dec. 25, 1851. They had five children: Arvilla, born in 1852, is not living; Mariette, born Dec. 25, 1854, married Jonathan Snyder, have a family; Leverett, born Feb. 6, 1857, married Cora Smith, Nov. 2, 1879, had two children, Perry F. and Ida I. Leverett died May 21, 1910; Rosa E., born Jan. 13, 1860, married Emmett Byers, and have children; and Harrison, born about 1862, is not living. Elijah Spencer died in the Union army in 1863, and his widow married JONATHAN SQUIRES, who was born in Ohio, July 25, 1823, by whom she had one son, J. Wilbur, born June 16, 1865, in DeKalb county, Ind., married Cora M. Thomas, Aug. 24, 1887, they reside in St. Joseph, Mich., five children. Mrs. Myra Squires died in Allen county, Ind., Feb. 13, 1874.

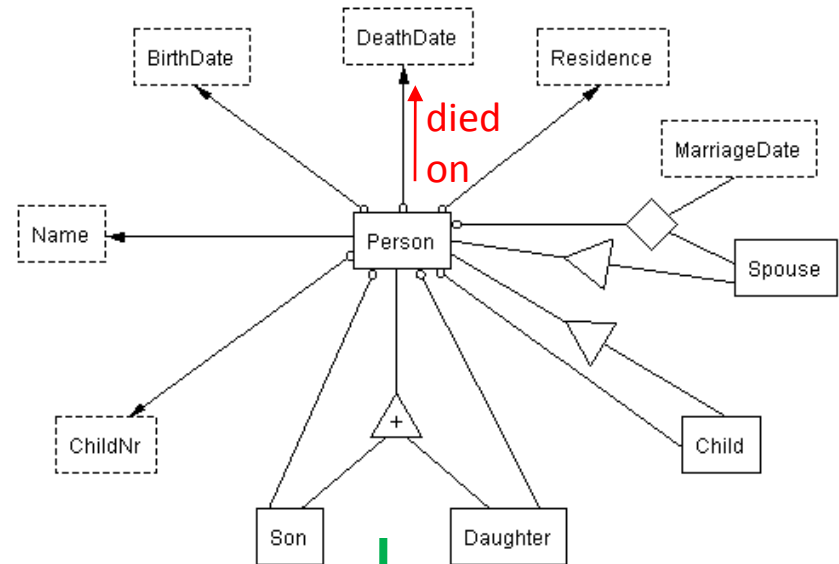
# OntoSoar (Peter Lindes, Deryle Lonsdale)

```
+-----Xp-----+
+Wd+--Ss+MVp+IN--+ |
|   |   |   |   |   |
^ Mary died.v in 1853 .
```

Soar

in(died,N4)  
1853(N4)  
Mary(N2)  
died(N2)

Person(X1)  
Name(X2,"Mary")  
Person(X1) has Name(X2)  
DeathDate(X3,"1853")  
Person(X1) died on DeathDate(X3)



OntoES

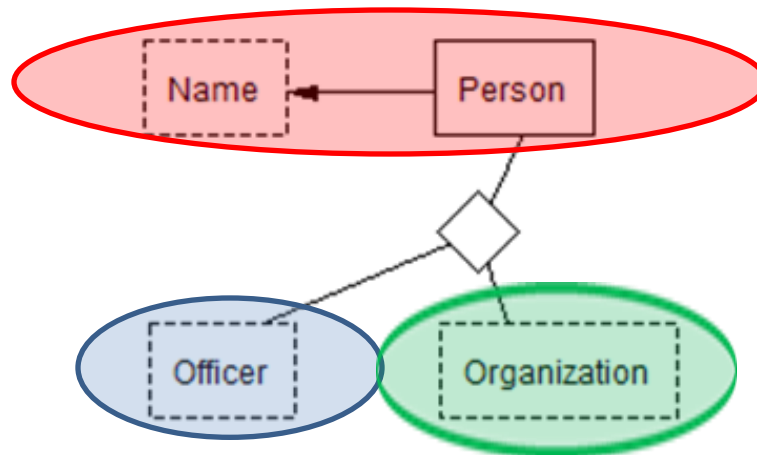
Person(...)  
Name(...)  
Person(...) has Name(...)  
DeathDate(...)  
Person(...) died on DeathDate(...)

# OntoSoar (Peter Lindes, Deryle Lonsdale)

3. Theodore Andruss, D. 1860.

4. Emma Goble, b. 1862.

Miss Emma Goble Lathrop, official historian of the New York Chapter of the Daughters of the American Revolution, is one of the youngest members to hold office, but one whose intelligence and capability qualify her for such distinction. Miss Lathrop is not without experience; in her present home and native city, Newark, N. J., she has filled the positions of secretary and treasurer to the Girls' Friendly Society for nine years, secretary and president of the Woman's Auxiliary of Trinity Church Parish treasurer of the St Catherine's Guild of St Barnabas



# OntoSoar (Peter Lindes, Deryle Lonsdale)

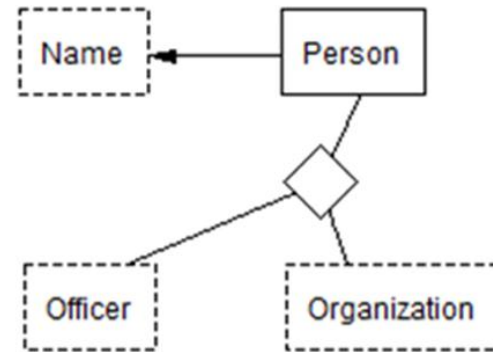
```

+-----Xp-----+
|           +-----Ost-----+           +-----Js-----+
| +---Wd---+ +---Ss---+           +---A---+ +---Mp---+ +---DG---+
|   |       |   |       |           |       |   |       |
^ Emma was.v official.a historian.n of the NYCDAR .
  
```

Soar

```

  of(x1,x2)
  NYCDAR(x2)
  Emma(x1)
  historian(x1)
  official(x1)
  
```



OntoES

```

Name("Emma")
Officer("historian")
Organization("NYCDAR")
Person-Name(y1,"Emma")
  
```

Person-Officer-Organization(y1,"official historian","NYCDAR")

# GreenFIE-HD<sup>++</sup>

FRONTIER

ListReader

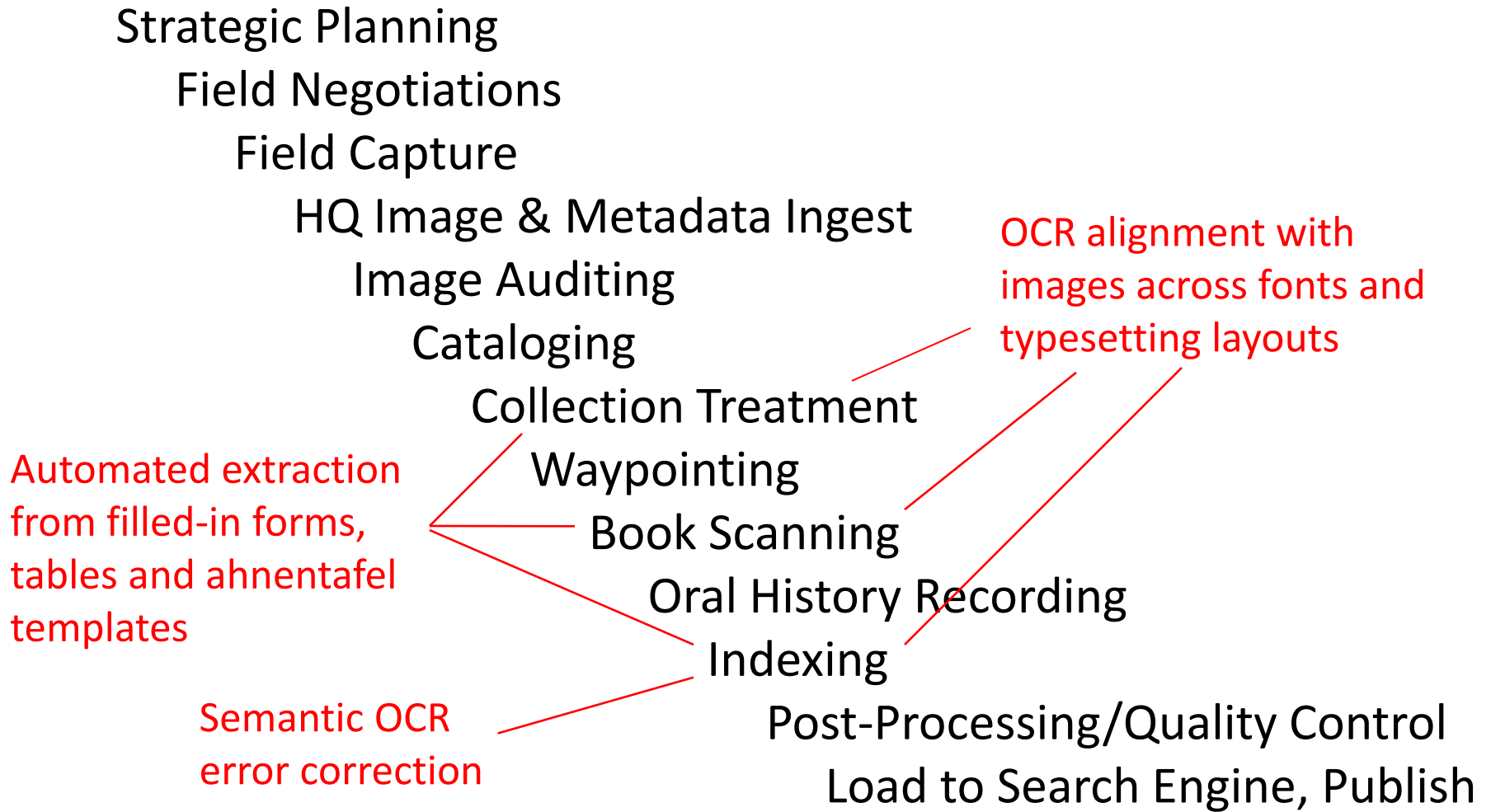


GreenFIE-HD

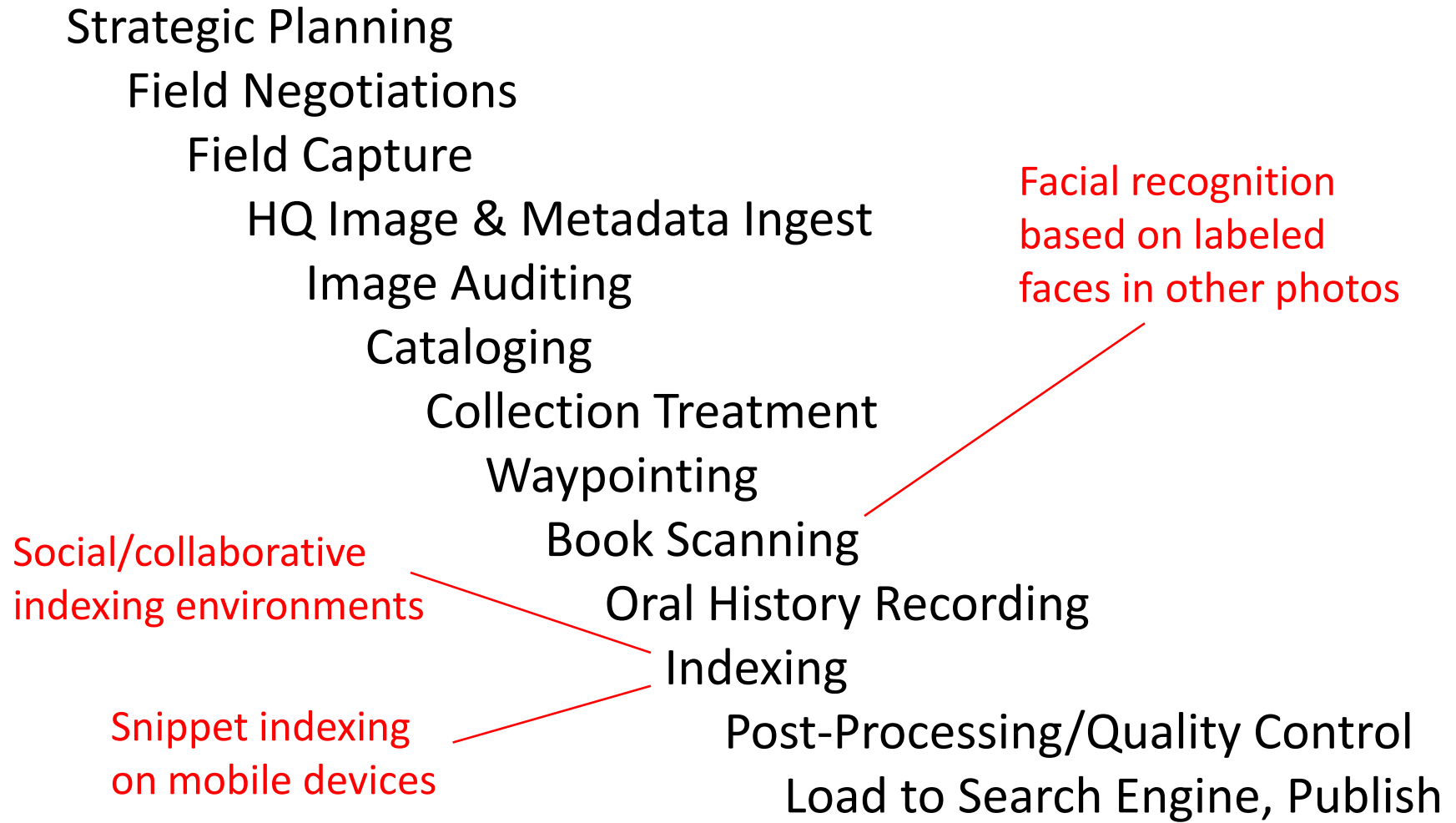
OntoSoar



# Research Wish List



# Research Wish List (Jake Gehring)



# Research Wish List (Jake Gehring)

Strategic Planning

Field Negotiations

Field Capture

HQ Image & Metadata Ingest

Image Auditing

Cataloging

Collection Treatment

Waypointing

Book Scanning

Oral History Recording

Indexing

Post-Processing/Quality Control

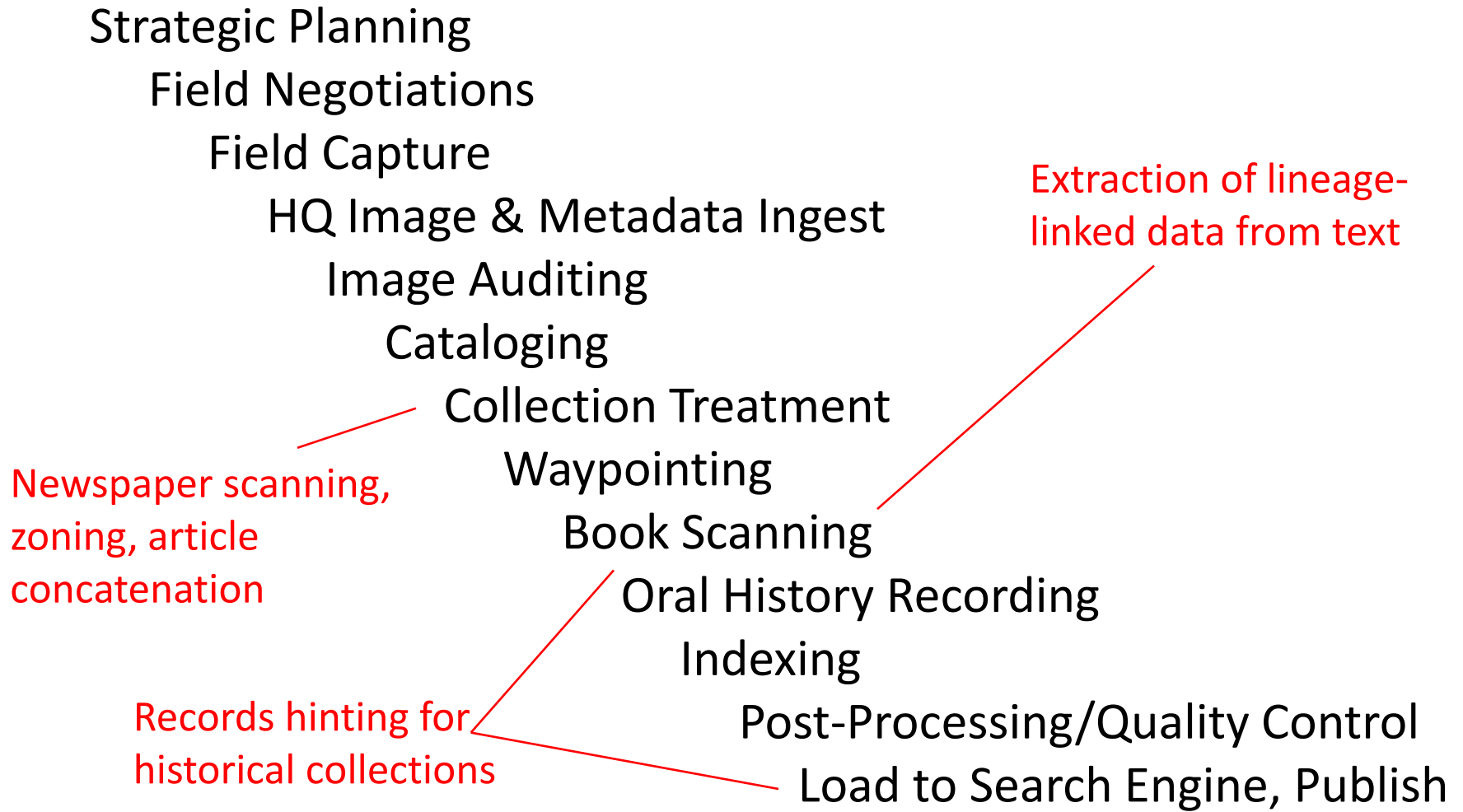
Load to Search Engine, Publish

Extraction of lineage-linked data in register-style tables

Handwriting recognition

Search results clustering based on kinship networks

# Research Wish List (Jake Gehring)



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Strategic Planning

Field Negotiations

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HQ Image & Metadata Ingest

Image Auditing

Cataloging

Collection Treatment

Waypointing

Book Scanning

Oral History Recording

Indexing

Post-Processing/Quality Control

Load to Search Engine, Publish

Image capture  
software to eliminate  
blur and focus issues

Automatic document  
classification

Efficient routing of  
work to volunteers

# THE ELY ANCESTRY. SEVENTH GENERATION.

419

241213. Mary Elias Warner, b. 1806, dau. of Samuel Selden Warner and Annah Tully; m. 1830, Joel M. Gloyd (who was connected with Chief Justice Waite's family).

241311. Abigail Huntington Lathrop (widow), Boonton, N. J., b. 1810, dau. of Mary Ely and Gerard Lathrop; m. 1835, Donald McKensie, West Indies, who was b. 1812, d. 1839.

(The widow is unable to give the names of her husband's parents.)  
Their children:

1. Mary Ely, b. 1836, d. 1880
2. Gerard Lathrop, b. 1838.

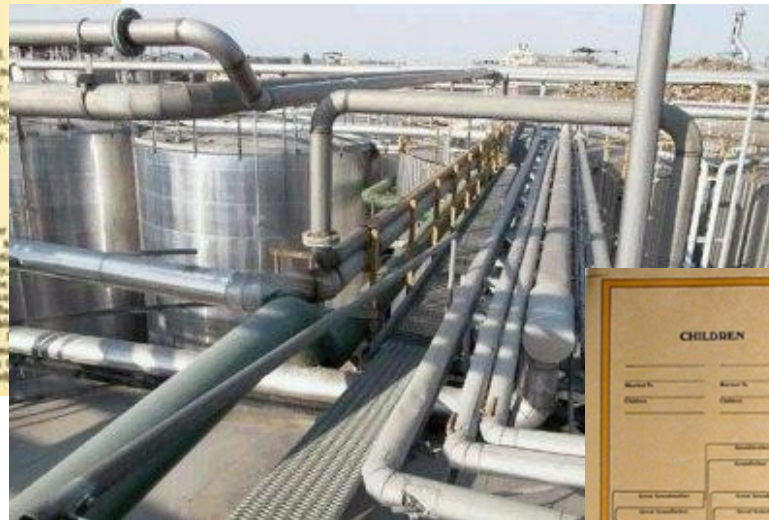
241312. William Gerard Lathrop, Boonton, N. J., b. 1812, d. 1862, son of Mary Ely and Gerard Lathrop; m. 1837, Charlotte Bracken Jennings, New York City, who was b. 1818, dau. of Nathan Thelmont Jennings and Maria Miller. Their children:

1. Maria Jennings, b. 1838, d. 1840.
2. William Gerard, b. 1840.
3. Donald McKensie, b. 1842, d. 1843. } Twins
4. Anna Marguerite, b. 1843.
5. Anna Catherine, b. 1845.

241314. Charles Christopher Lathrop, N. Y. City, b. 1817, d. 1862, son of Mary Ely and Gerard Lathrop; m. 1846, Mary Augusta Anderson, Newark, N. J., who was b. 1825, dau. of Judge Halstead Andrus and Emma Sutherland Goble. Mrs. Lathrop at her home, 992 Broad St., Newark, N. J., Friday morning, 26 1896. The funeral services were held at her residence on Monday, 7, 1896, at half past two o'clock P. M. Their children:

1. Charles Halstead, b. 1847, d. 1862.
2. William Gerard, b. 1848, d. 1862.
3. Theodore Andrus, b. 1850.
4. Emma Goble, b. 1852.

Miss Emma Goble Lathrop, official historian of the New York Chapter Daughters of the American Revolution, is one of the youngest members of the office, but one whose intelligence and capability qualify her for such duties. Miss Lathrop is not without experience; in her present home and native city, Newark, N. J., she has filled the positions of secretary and treasurer to the Friendly Society for nine years, secretary and president of the Women's Aid of Trinity Church Parish, treasurer of the St. Catherine's Guild of St. Paul Hospital, and manager of several of Newark's charitable institutions whose grandparents were instrumental in founding. Miss Lathrop traces her back through many generations of famous progenitors on both sides. Her ancestors were among the early settlers of New Jersey, among them John S. who received patent in 1664 for the purchase of Elizabethtown, and who is still



# Summary

Streamline the Pipeline: Research Opportunities

“turn ... the heart of the children to their fathers”

