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Literature Review

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1 Introduction

1.1 The Research Question

(what is the main question/s you are trying to answer in your dissertation?) Define topic/Why this topic? Point out overall trends, gaps, themes

2 Previous work

discuss your sources by theme, then date

2.1 Wikipedia

identify, analyse

emblem of the Web2.0 era [9]

used to predict box office success [10] But does it reveal westernness?

Denning: Wikipedia risks: Accuracy, Motives, Uncertain Expertise, Volatility, Coverage, Sources (not many offline sources) [3]

Denning says it cannot attain the status of a true encyclopedia without more formal content-inclusion and expert review procedures[3] this corroborates by findings in [4]?

2.1.1 On Wikipedia

‘robust and remarkable growth’ [5][12]

Wikipedia, at the last dump, consisted 800G of compressed data [1]

2.1.2 Evaluating Wikipedia articles

identify, analyse

after article mentioned in press [7]

compared by ‘experts’ to ‘equivalent’ Encyclopedia Britannica articles [4]

found metrics of article quality through factor analysis [11]

Analysis by conflict - revisions?[5]

WikiTrust. The most 'complete' of the many of the. Exists as firefox plugin (though it doesn't work any more) Culmination of various studies that try to QUOTE [2] and QUOTE CITE. It was assessed as recently as 2011 [8]

2.2 Edit difference

Standard: Levenshtein distance [6]

2.3 My work in context of these sources

different views emerging topics gaps and inconsistencies

3 Conclusions

PREDIFINED / NOT-PREDEFINED ideas of quality. look for when the the article levels off? And do this by DATE rather than REVISION. We may assume that pageviews are more well-distributed than revisions

summarize major contributions (which do we care about?) evaluate your current position point out any flaw in methodology/research/contradictions are there any gaps in the area which you will cover in your research? How will you integrate sources you have mentioned into your dissertation? Point out any areas for further study

A Appendix A: Python class for scraping Wikipedia article version

A.1 Code

```
import requests
import time
import json
import csv
import wikipedia
from bs4 import BeautifulSoup
from datetime import datetime, timedelta
from decimal import Decimal

WIKI_API_URL = 'http://en.wikipedia.org/w/api.php'
WIKI_USER_AGENT = 'wikipedia (https://github.com/goldsmith/Wikipedia/)'

class RevisionScrape:
    par = {
        'format': 'json',
        'action': 'query',
        'prop': 'revisions'
    }
    head = {
        'User-Agent': WIKI_USER_AGENT
    }
    rand = True
    pagelimit = 1
    historylimit = -1
    rl = False
    rl_minwait = None
    rl_lastcall = None
    pageid = 0
    parentid = 0
    childid = 0

    #atm naively assuming headers, params, titles to be in correct format
    def __init__(self, pagelimit=1, historylimit=-1, _headers=None, _params=None,
        _titles=None):
        if(_params):
            params = _params

        if(_headers):
            self.head = _headers

        if(_titles):
            self.params['titles'] = _titles
            self.rand = False

        self.pagelimit = pagelimit
        self.historylimit = historylimit

    def scrape(self, indexfilename, contentsfilename):
        self._pace()
        index_f = open(indexfilename + ".csv", "ab") #HACK = needs to migrate to postgres
        contents_f = open(contentsfilename + ".csv", "ab") #HACK = needs to migrate to
            postgres
        index = csv.writer(index_f)
```

```

contents = csv.writer(contents_f)
index.writerow(["PAGEID", "REVISION", "USER", "USERID", "TIMESTAMP", "SIZE", "COMMENT"])
contents.writerow(["PAGEID", "REVISION", "CONTENT"])

for i in range(self.pagelimit):
    if 'rvprop' in self.par:
        del self.par['rvprop']
    if 'revids' in self.par:
        del self.par['revids']
    print "fetching page"
    if(self.rand):
        self.par['titles'] = wikipedia.random() #get random title
    self.childid = self._getlatest()
    r = requests.get(WIKI_API_URL, params=self.par, headers=self.head)
    self._rate()
    del self.par['titles']
    self._tracehist(index, contents)

def _getlatest(self):
    r = requests.get(WIKI_API_URL, params=self.par, headers=self.head)
    r = r.json()

    #HACK = should grab multiple pages
    for key, value in r['query']['pages'].iteritems():
        self.pageid = key
    #HACK = should grab multiple revisions (for each pageid)
    self.parentid = self.childid =
        r['query']['pages'][self.pageid]['revisions'][0]['revid']
    return self.childid

def _tracehist(self, index, contents):
    ##We store revisions we've visited
    ##loops can occur in revision histories
    visited = []
    i = self.historylimit
    j = 0

    self.par['rvprop'] =
        'userid|user|ids|flags|tags|size|comment|contentmodel|timestamp|content'

    while (self.parentid not in visited) and i is not 0 and self.parentid is not 0:
        self.par['revids'] = self.parentid

        self._pace()

        r = requests.get(WIKI_API_URL, params=self.par, headers=self.head)
        r = r.json()

        self._rate()

        visited.append(self.childid)

        #print r

        self.childid = r['query']['pages'][self.pageid]['revisions'][0]['revid']
        self.parentid = r['query']['pages'][self.pageid]['revisions'][0]['parentid']
        user = r['query']['pages'][self.pageid]['revisions'][0]['user']
        userid = r['query']['pages'][self.pageid]['revisions'][0]['userid']
        size = r['query']['pages'][self.pageid]['revisions'][0]['size']
        timestamp = r['query']['pages'][self.pageid]['revisions'][0]['timestamp']
        comment = "" #comments sometimes don't return from old revisions...

```

```

try:
    comment = r['query']['pages'][self.pageid]['revisions'][0]['comment']
except:
    comment = ""
content = r['query']['pages'][self.pageid]['revisions'][0]['*']

index.writerow([self.pageid, self.childid, user.encode("UTF-8"), userid,
    timestamp, size, comment.encode("UTF-8")])
contents.writerow([self.pageid, self.childid, content.encode("UTF-8")])

if(self.historylimit > 0):
    print self.pageid, "fetch", j+1, "of", self.historylimit, ", revid",
        self.childid, "timestamp", str(timestamp)
    i = i - 1
else:
    print self.pageid, "fetch", j+1, ", revid", self.childid, "timestamp",
        str(timestamp)
j = j + 1
print "limit reached"

def _pace(self):
    if self.rl and self.rl_last_call and self.rl_lastcall + self.rl_minwait >
        datetime.now():
        wait_time = (self.rl_lastcall + self.rl_minwait) - datetime.now()
        time.sleep(int(wait_time.total_seconds()))

def _rate(self):
    if self.rl:
        self.rl_lastcall = datetime.now()

scraper = RevisionScrape(pagelimit=50, historylimit=1000)
scraper.scrape("100x1000randIndex", "100x1000randContents")

```

A.2 Example output

B Appendix B: Python class for basic, space-naive Levenshtein implementation

B.1 Code

```
class LevDistBasic:
    e = [] #edit operation array
    t = [] #grid array
    x = "" #string1
    y = "" #string2
    m = 0 #length string1
    n = 0 #length string2
    dist = 0 #Levenshtein distance
    ed = [] #the edit operation, calculated in _calculate()

    def __init__(self, _x, _y):
        self.x = _x
        self.y = _y
        self.m = len(_x)
        self.n = len(_y)
        self.t = [[0]*(self.n+1) for _ in xrange(self.m+1)]
        self.e = [[" "]*(self.n+1) for _ in xrange(self.m+1)]
        self.dist = self._calculate()

    def __str__(self):
        return str(self.distance())

    def distance(self):
        return self.dist

    def strings(self):
        return self.x, self.y

    def table(self):
        return self.t

    def operation(self):
        return self.ed

    ##ADD WARNING for long strings / deal with them
    def showtable(self):
        result = ""
        for ch in self.y:
            result = result + ch + " "
        print " ", result
        for r in range(len(self.t)):
            s = ' '
            if r:
                s = self.x[r-1]
            print s, ' ', self.t[r]

    def showop(self):
        for i, op in enumerate(self.ed):
            l = str(i) + ": "
            if op[0] == 'I':
                l += "insert " + op[-1]
            elif op[0] == 'K':
                l += "keep " + op[-1]
            elif op[0] == 'D':
```

```

        l += "delete " + op[-1]
    elif op[0] == 'S':
        l += "swap " + op[-1][0] + " for " + op[-1][-1]
    else:
        return "FAIL: incorrect operation"
    print l

def _ed(self):
    i, j = len(self.e)-1, len(self.e[0])-1
    self._ed_recursive(i,j)

def _ed_recursive(self,i,j):
    if self.e[i][j] == ' ':
        if i == 0 and j > 0:
            self.ed.append(('D', self.y[0]))
        if j == 0 and i > 0:
            self.ed.append(('D', self.x[0]))
        return
    if self.e[i][j] == 'K':
        self._ed_recursive(i-1, j-1)
        self.ed.append((self.e[i][j], self.x[i-1]))
    elif self.e[i][j] == 'S':
        self._ed_recursive(i-1, j-1)
        self.ed.append((self.e[i][j], (self.x[i-1] + ',' + self.y[j-1])))
    elif self.e[i][j] == 'D':
        self._ed_recursive(i-1,j)
        self.ed.append((self.e[i][j], self.x[i-1]))
    else:
        self._ed_recursive(i,j-1)
        self.ed.append((self.e[i][j], self.y[j-1]))

def _calculate(self):
    for i in xrange(self.m+1):
        self.t[i][0] = i
    for j in xrange(self.n+1):
        self.t[0][j] = j
    j = 1
    while j < self.n+1:
        i = 1
        while i < self.m+1:
            c = (self.x[i-1] != self.y[j-1])
            dl = self.t[i-1][j] + 1
            ins = self.t[i][j-1] + 1
            sbs = self.t[i-1][j-1] + c
            self.t[i][j] = min(ins, dl, sbs)
            if ins < dl and ins < sbs:
                self.e[i][j] = 'I'
            elif dl <= sbs:
                self.e[i][j] = 'D'
            else:
                if(self.x[i-1] != self.y[j-1]):
                    self.e[i][j] = 'S'
                else:
                    self.e[i][j] = 'K'
            i += 1
        j += 1
    self._ed()
    return self.t[self.m][self.n]

```

B.2 Example output

References

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