

A glass vase containing water and several green bamboo stalks is positioned on a wooden surface. In the foreground, a white ceramic sheep figurine with a textured, scale-like body and a small wooden branch for a tail is visible. The background shows a window with a view of a green landscape.

Geokit in social apps

What is Geokit?

- A RubyGem and Rails plugin
- A wrapper to various geocoding providers
- Supports geocoding addresses, lat/lng coordinates, and IP Addresses

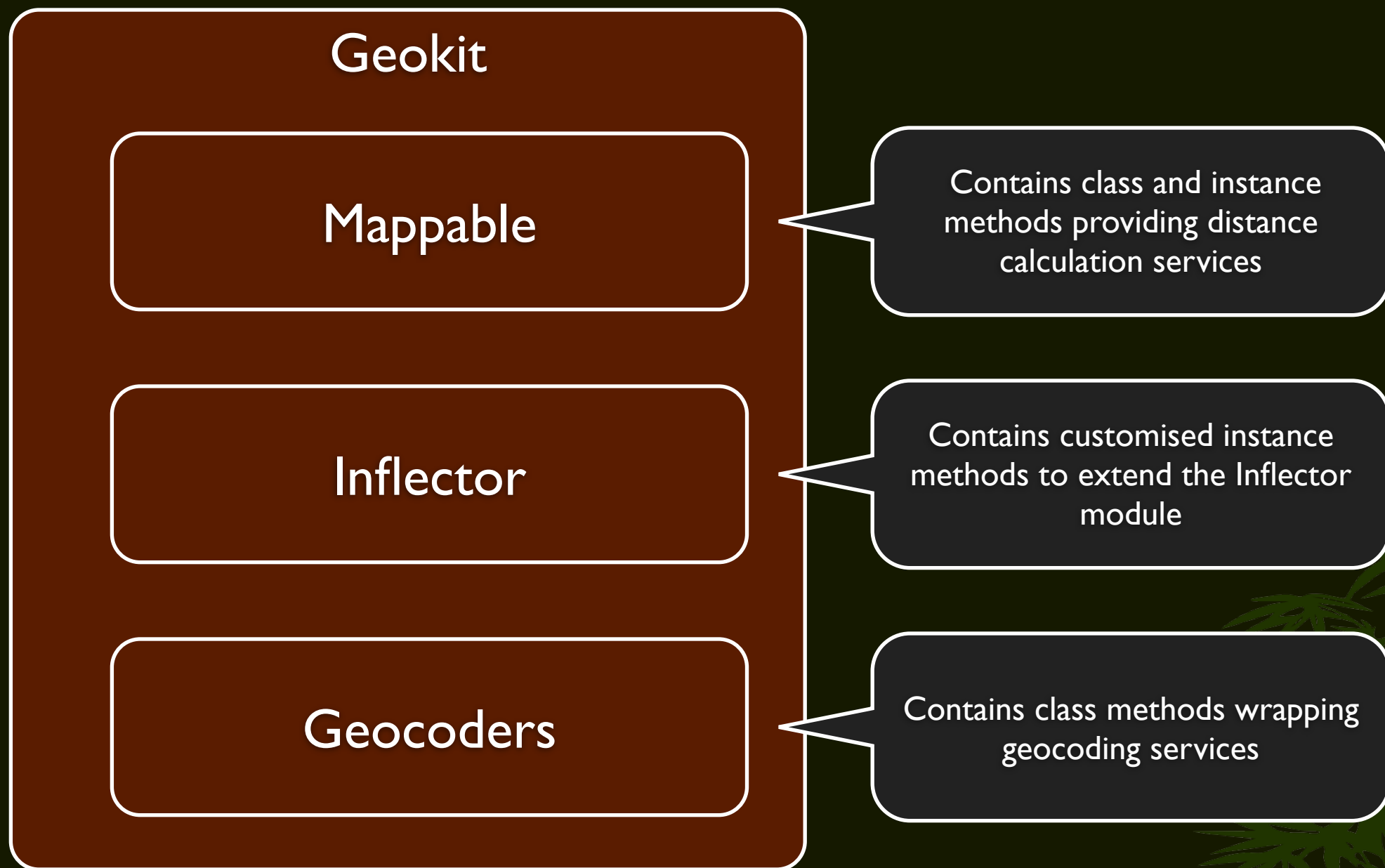


What is Geokit?

- Provides distance, heading, and midpoint calculations between two points
- Provides rectangular bounds calculation; reveal if a point is within bounds



The guts of the gem



The guts of the gem

Geocoders

GeocodeError < StandardError

Geocoder

CaGeocoder

UsGeocoder

YahooGeocoder

GeonamesGeocoder

GoogleGeocoder

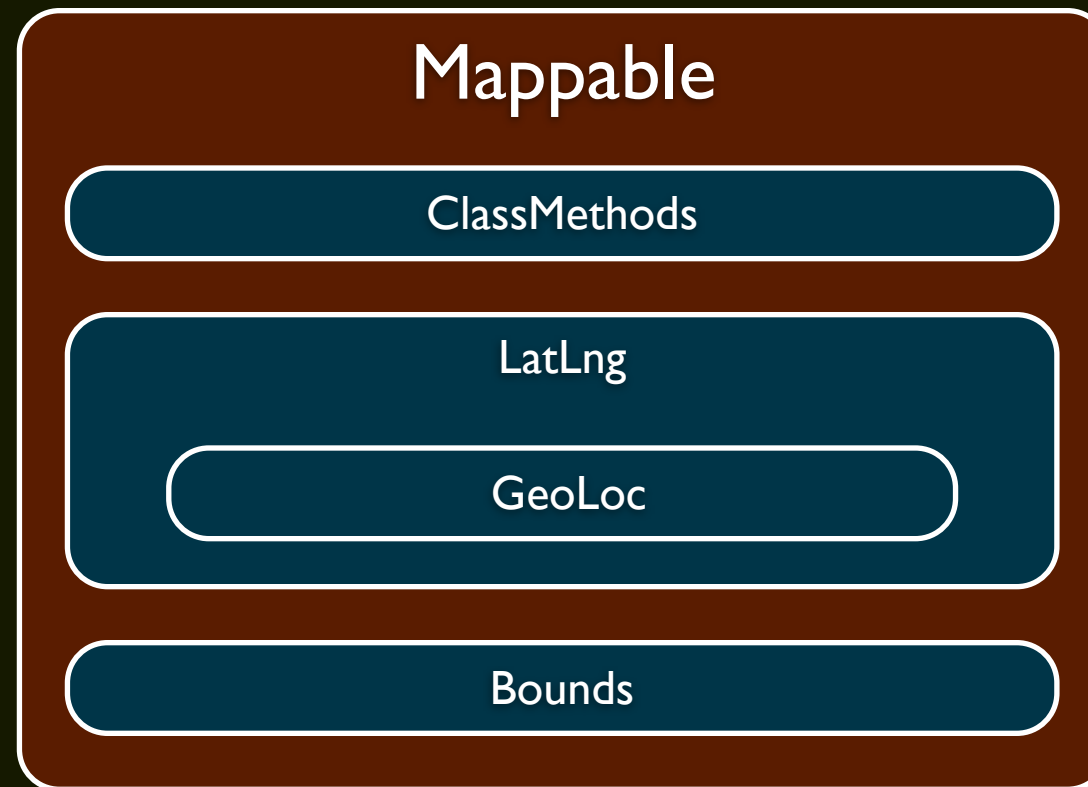
GeoPluginGeocoder

IpGeocoder

MultiGeocoder



The guts of the gem





Geocoding an address

```
sudo gem install geokit
```

```
irb
```

```
> require 'rubygems'
```

```
> require 'geokit'
```





Geocoding an address

```
> a=Geokit::Geocoders::YahooGeocoder.geocode('45  
Balls Pond Road, London, UK')
```

```
=> <Geokit::GeoLoc:0x19105cc  
@all=[#<Geokit::GeoLoc:0x19105cc ...>],  
@lat=51.546004, @precision="address",  
@state="United Kingdom", @success=true,  
@city="Hoxton, N1 4", @country_code="GB",  
@provider="yahoo", @street_address="45 Balls Pond  
Road", @lng=-0.077033, @full_address=nil, @zip=nil>
```

```
> a.ll
```

```
=> "51.546004,-0.077033"
```





Reverse Geocoding

```
> b=  
Geokit::Geocoders::GoogleGeocoder.geocode(a.ll)
```

(output skipped)

```
> b.all.map{|obj| puts obj.full_address}
```

```
=> 28-30 Bentley Rd, Hackney, Greater London, UK  
Islington, Greater London N1 4, UK  
Hackney, Greater London, UK  
Hackney, Greater London, UK  
Greater London, UK  
England, United Kingdom  
United Kingdom
```





IP Address Geocoding

```
> cia_dot_gov =  
Geokit::Geocoders::GeoPluginGeocoder.geocode('198.8  
1.129.100')
```

```
=> #<Geokit::GeoLoc:0x18160e0  
@all=[#<Geokit::GeoLoc:0x18160e0 ...>],  
@lat=38.957901, @precision="unknown", @state="VA",  
@success=true, @city="Reston", @country_code="US",  
@provider="geoPlugin", @street_address=nil,  
@lng=-77.343903, @full_address=nil, @zip=nil>
```

Rails plugin magic

- The rails plugin can automatically geocode new ActiveRecord records upon creation
- It can geocode your ip address in the controller and store the result in the session.





















Hippo

Logged in as @paulbjensen [Log out](#)

You are in Hackney, Greater London, UK

Friends

 [Matthew Ford](#)
 [Kalvir Sandhu](#)
 [Alastair McKenzie](#)
 [adam_leach](#)
 [RubyFlow](#)
 [ismael cells](#)
 [Stef Notarangelo](#)
 [rewiredstate](#)
 [CTofer](#)
 [Tom ten Thij](#)
 [guardianfilm](#)
 [Ruby Inside](#)
 [Ruby on Rails](#)
 [El Rug](#)
 [makoto_inoue](#)
 [Clearleft](#)
 [Richard Birkin](#)
 [Jason Lee](#)

Home



[RubyFlow](#)
Ruby tips from me, your idol <http://tinyurl.com/dzbntv>



[microformats](#)
yesterday @glennjones Identify <http://tr.im/identfy> demo at swfoo, today @ntoll added @microformats support to #django <http://tr.im/djangouf>!



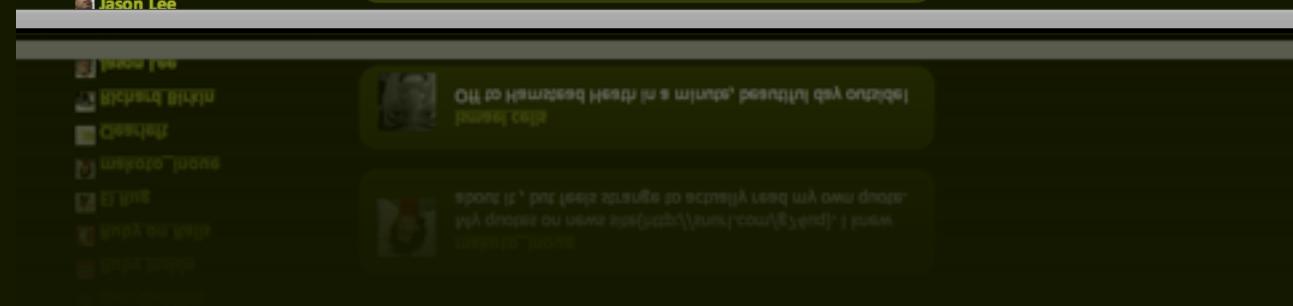
[Geoffrey Grosenbach](#)
Step one: Trace Element Skateboards logo and call it your own. Step two: Profit! <http://bit.ly/sxrDE>



[makoto_inoue](#)
My quotes on news site(<http://snurl.com/g74uq>). I knew about it , but feels strange to actually read my own quote.



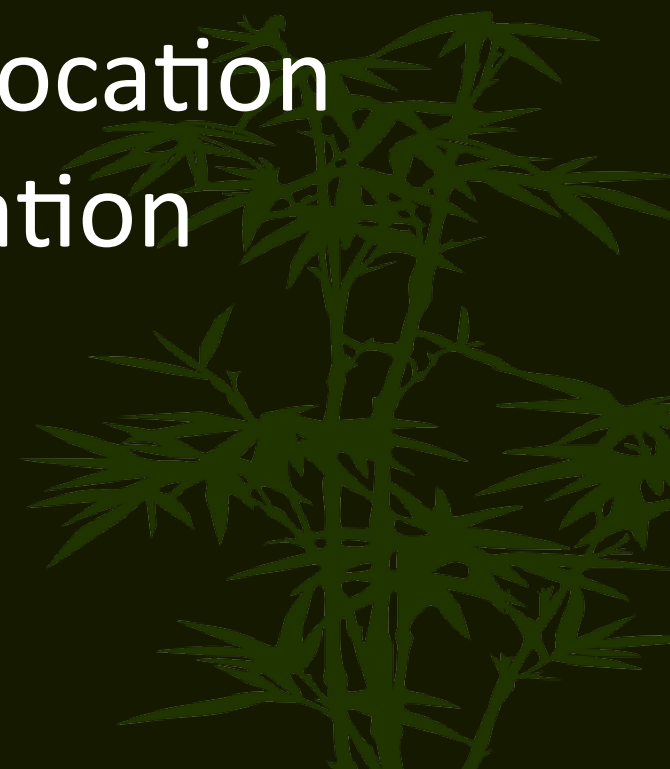
[ismael cells](#)
Off to Hamstead Heath in a minute, beautiful day outside!



Hippo

Hippo

- A rails application built using Michael Bleigh's excellent TwitterAuth rails template.
- Let's geocode the logged-in user's location upon them logging in to the application



Auto-geocode model

```
class User < TwitterAuth::GenericUser
  acts_as_mappable :auto_geocode => { :field => :location }
  before_validation_on_update :auto_geocode_address, :if
    => :location_changed?
end
```

Getting a location from an ip address

- Maybe your users don't login to your application, or provide an address to geocode, what do you do then?



Getting a location from an ip address

- You can use a 1 line method in your controller to geocode your user's ip address and get a city-level accurate location for your user.



Getting a location from an ip address

```
class StaticController < ApplicationController  
  geocode_ip_address  
end
```

So you know where I am...

- ...but maybe that's not what your application cares about.
- What if you have an application that has lots of records with addresses attached to them, and you'd like to make those records searchable by their location?



Active Record finders

- Geokit gives you a collection of ActiveRecord-style finders that can:
 - auto-geocode the input location
 - find records within a given range
 - order results by their distance from the address



Active Record finders

```
class CafeController < ApplicationController

  def search
    @query = params[:query]
    @range = params[:range]
    Cafe.find_within(@range, :origin => @query, :order =>
      'distance')
  end

end
```

What does Geokit do?

- Provides distance, heading, and midpoint calculations between two points
- Provides rectangular bounds calculation; reveal if a point is within bounds





Distance Calculation

```
> london =  
Geokit::Geocoders::GoogleGeocoder.geocode('London')  
  
=> #<Geokit::GeoLoc:0x17d1c88  
@all=[#<Geokit::GeoLoc:0x17d1c88 ...>],  
@lat=51.5001524, @precision="city", @state="Greater  
London", @success=true, @city="London",  
@country_code="GB", @provider="google",  
@street_address=nil, @lng=-0.1262362,  
@full_address="Westminster, London, UK", @zip=nil>
```



Distance Calculation

```
> new_york =  
Geokit::Geocoders::GoogleGeocoder.geocode('New  
York')
```

```
=> #<Geokit::GeoLoc:0x182d510  
@all=[#<Geokit::GeoLoc:0x182d510 ...>],  
@lat=40.756054, @precision="city", @state="NY",  
@success=true, @city="New York",  
@country_code="US", @provider="google",  
@street_address=nil, @lng=-73.986951,  
@full_address="New York, NY, USA", @zip=nil>
```





Distance Calculation

```
>london.distance_from(  
new_york, :units  
=> :miles)
```

```
=> 3462.62226994318
```

```
>london.distance_from(  
new_york, :formula  
=> :flat)
```

```
=> 2748.37417609529
```





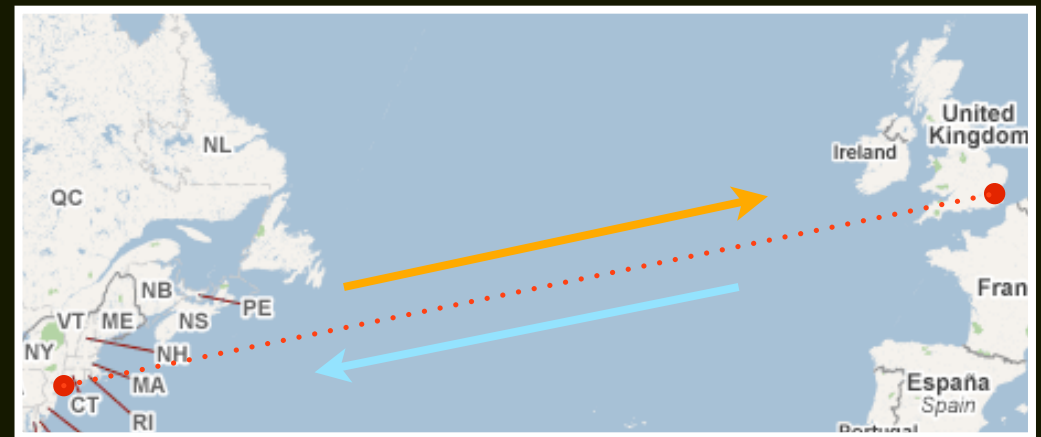
Heading Calculation

```
>london.heading_from(  
new_york)
```

```
=> 51.254276626762
```

```
>london.heading_to(  
new_york)
```

```
=> 288.368616560178
```

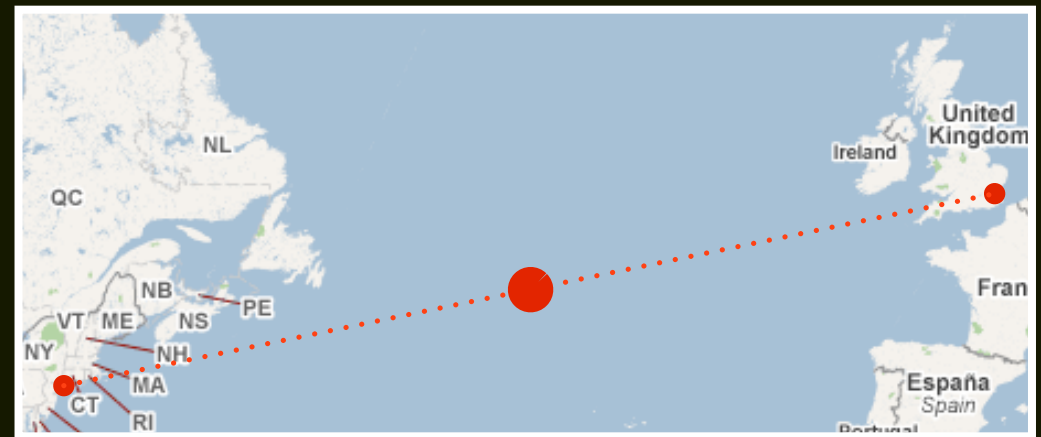




Midpoint Calculation

```
> london.midpoint_to(new  
_york)
```

```
=> #<Geokit::LatLng:  
0x1789960  
@lat=52.3833438845311,  
@lng=-41.2615007683062  
>
```

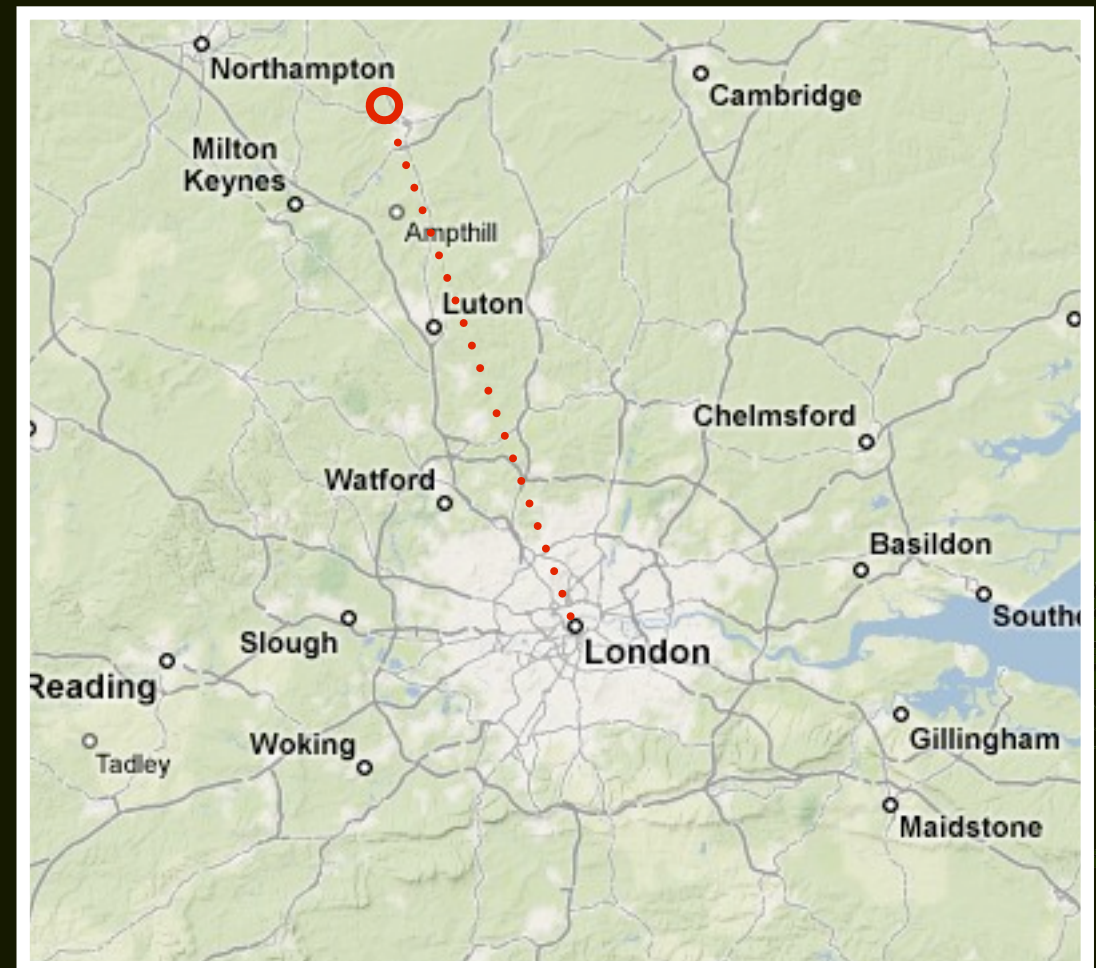




Endpoint Calculation

```
> london.endpoint(340,  
50)
```

```
=> #<Geokit::LatLng:  
0x18385f0  
@lat=52.1787256392731,  
@lng=-0.5294069905067>
```





Within Bounds

```
> south_west =  
Geokit::Geocoders::GoogleGeocoder.geocode('Bristol,  
UK')
```

(output skipped)

```
> north_east =  
Geokit::Geocoders::GoogleGeocoder.geocode('Hull,  
UK')
```

(output skipped)





Within Bounds

```
> bounds = Geokit::Bounds.new(south_west,  
north_east)
```

(output skipped)

```
> midlands =  
Geokit::Geocoders::GoogleGeocoder.geocode('Nottingh  
am, UK')
```

(output skipped)





Within Bounds

```
> bounds.contains?  
(midlands)
```

```
=> true
```

```
> bounds.center
```

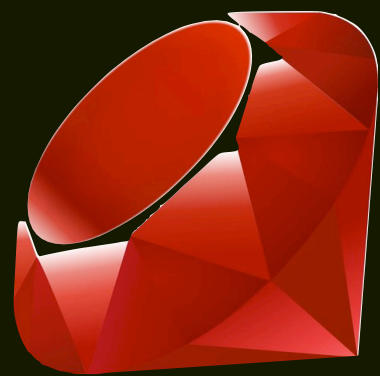
```
=> #<Geokit::LatLng:  
0x1708090  
@lat=52.6051976419128,  
@lng=-1.49169672003523  
>
```



Limitations

- Geokit's Rails plugin does not work with:
 - SQLite
 - PostgreSQL (versions below 8.1)





Ruby 1.9?





YES



Alternatives

- Graticule (<http://graticule.rubyforge.org>)
- YM4R (<http://ym4r.rubyforge.org>)
- Geocoder (<http://geocoder.rubyforge.org/>)



A useful resource

- Beginning Google Maps Applications with Rails and Ajax: From Novice to Professional
- Part-written by Andre Lewis (co-author of Geokit)
- Contains a wealth of information about geocoding



Thanks

Paul Jensen

New Bamboo

paul@new-bamboo.co.uk

@paulbjensen

