LocatThisView

An application to estimate the exact location of images using their visual features

Ali Zafarani
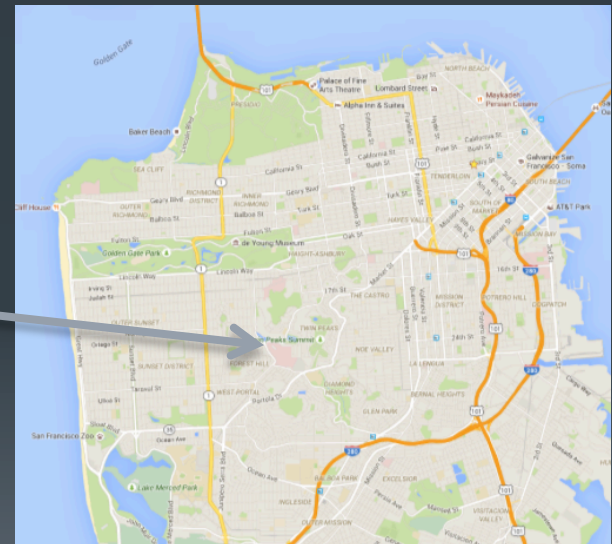
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Problem

- Can we create a model using street view images to predict the location of the photo?
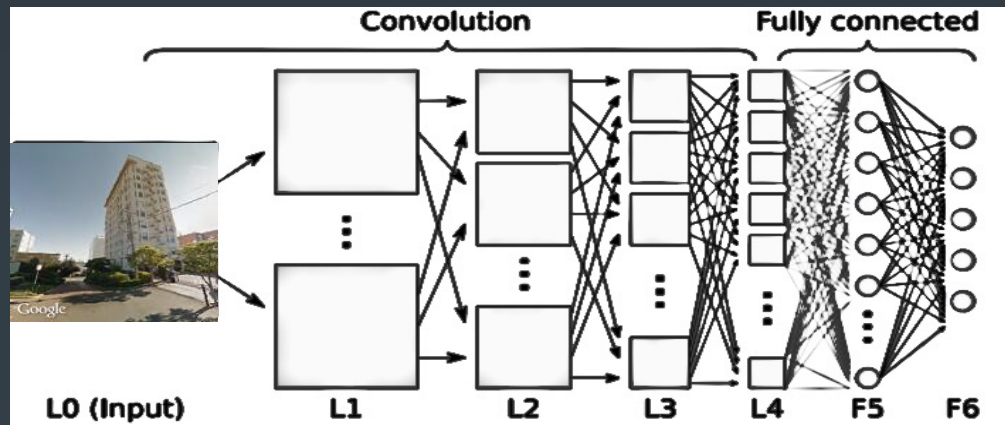

???

Motives

- Geo-location & image featurization
  - Business Marketing, real estate, insurance, news and media, etc.
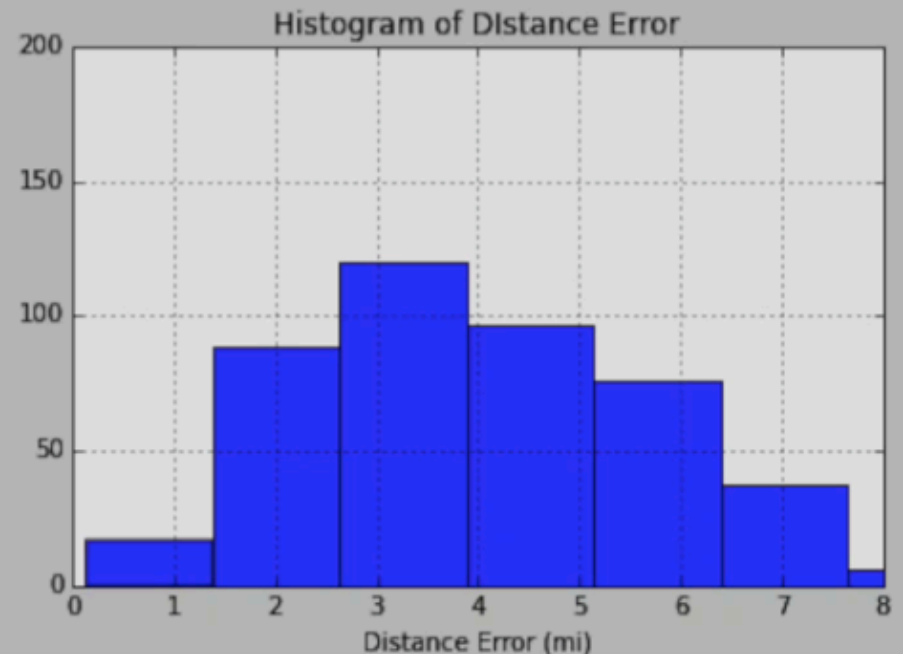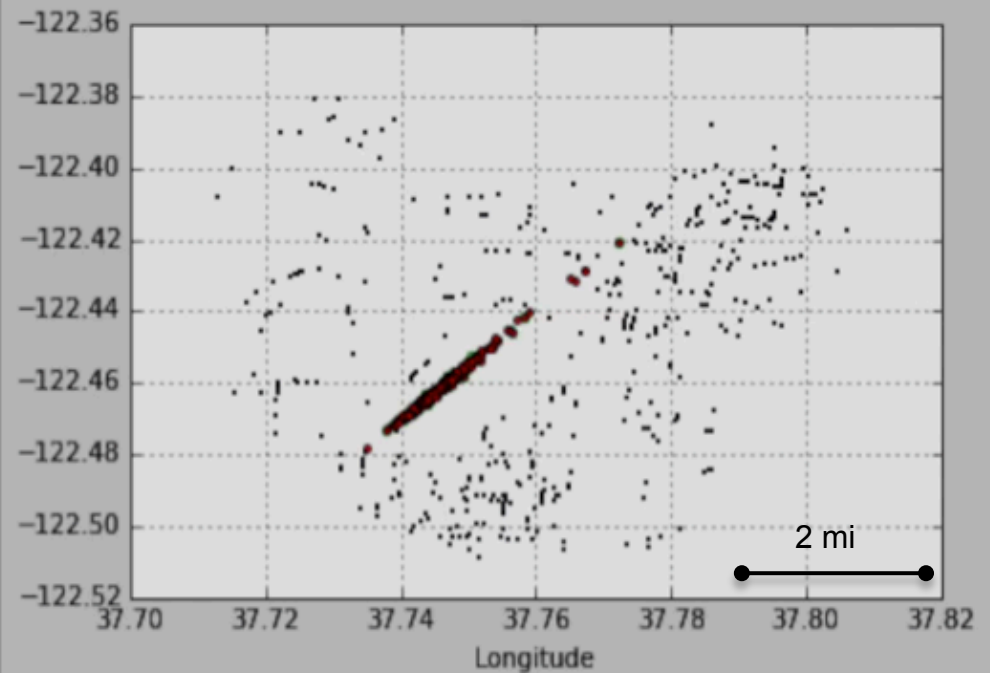- Emerging applications of deep learning.

Data Pipeline

Street, intersections and business database

theano

Convolution   Fully connected

L0 (Input)   L1   L2   L3   L4   F5   F6

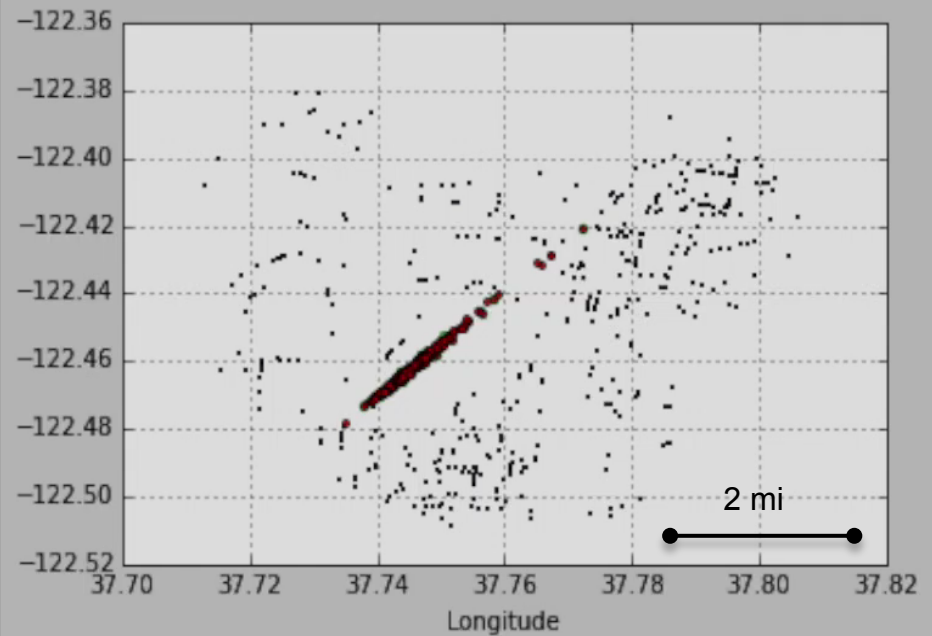amazon webservices

Google Street View

Test Results

- Top video shows test points converge to true values. Points become green when they reach 1km of true value.

- Bottom video shows the distance error in miles shrinking as model is fit.
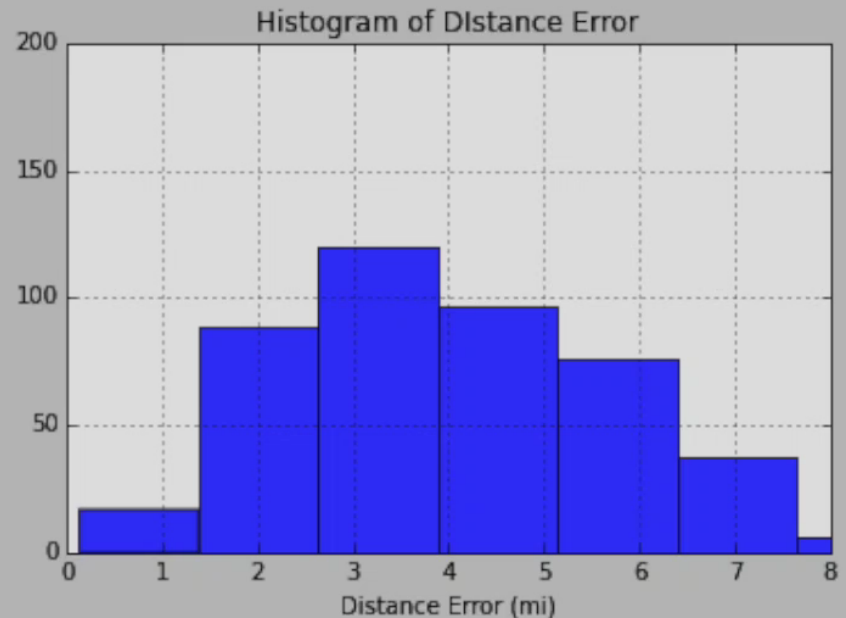
Test Results

- Test points converge to true values as model is getting trained. Points become green when they reach 1km of true value.

- The distance error in miles shrinking as model is fit.

Other Learnings

- Geo-locating images is feasible.

- Continuity of training set is important.

- Model performance is highly sensitive to CNN parameters.

- Computational demands increase rapidly with area.

Next steps

- Develop web application to geo-locate user input photo
- Extend model coverage to all areas of San Francisco
  - Current model covers about 1/3 of the streets
- Extend the model to other cities and areas.

Thank you!

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