Photo Odyssey

Create Personalized Photography Itineraries in Realtime
Motivation

- Target users: Photography enthusiasts and tourists

- What is missing in state-of-the-art?
  - Automatic trip planning for photography needs
  - Personalization options in itinerary
  - Search via Photography technical information and metadata
  - Semantic application for **realtime** integration from **photo streams**
Challenges

- Find whether point of interest (POI) crawled is valid
  - Use Google Maps geocoding/decoding API to search for lat/long of POI and compare obtained city with user argument city

- Multiple users need to access system simultaneously
  - Use Tornado, a non-blocking scalable Python-based web server

- Find highly rated photographs
  - Solution: Use #views, #favorites and 500px pulse ratings

- Bad Data, Incompatible JSON encoding
Challenges (Fuzzy String Matching)

- Find relevant photos
  - Jaro-Winkler Distance (photo title + tags AND poi + city name)

- Eliminate duplicate/similar POI names
  - Token Set Ratio (POI_{TripAdvisor} AND POI_{LonelyPlanet})
    - Closely related to Jaccard distance
    - “Brandenburg Gate” = “Brandenburg Gate (Brandenburger Tor)”
    - “Olympic Stadium” = “Olympic Stadium (Olympiastadion)”

- Assign “category” to Flickr image
  - Hybrid weighted matching between POI+City and Title+Tags
  - Best score from
    - Levenshtein
    - Partial Ratio (~Smith-Waterman)
    - Token Sort (~Sorted string tokens)
    - Token Set (~Jaccard)
  - If confidence is low then label as “Uncategorized”
Itinerary Customization

• Category of Photographs
• Camera Model
• Aperture/ISO/Shutter Speed Range
• Photo Relevance, Rating, Score

Choose Category:
- Black and White
- City & Architecture
- Uncategorized
- Still Life
- Nature
- Nude
- Fine Art
- People
- Transportation
- Sport
- Performing Arts
- Family
- Travel
- Film
- Animals
- Underwater
- Fashion
- Urban Exploration
- Commercial
- Macro
- Food

Choose Camera:
- Canon EOS 40D
- X350, D575Z, C360Z
- Samsung WB500, WB510 / VLLU
- Samsung HZ10W
- Canon EOS 5D Mark II
- Sony DSC-W120
- Canon EOS 7D
- Nikon D90
- OLYMPUS E-400
- Sony DSLR-A850
- Nikon D60
- Nikon D300
- Sony SLT-A99V
- Kodak EasyShare C763 Zoom
- Olympus SP500UZ
- Pentax K-7
- Canon EOS 550D
- Sony DSLR-A550
- HP psc4400
- Canon EOS Digital Rebel XS
- Canon EOS 5D
- Canon EOS 600D
- NIKON D600
- SONY DSC-N1
- Canon EOS REBEL T1i
- Sony DSLR-A700
- Canon EOS 400D Digital
- Nikon D40
- Canon EOS 300D
- Digital
- Sony DSLR-A500
- Nikon D700
- Nikon D7000
- Nikon D80
- Canon EOS 450D
- Olympus VR360, D760
- Fujifilm FinePix S304
- Nikon D80
- Pentax K200D
- Nikon D3
- Nikon E4600
- Olympus E-3
- Canon EOS 50D
- Nikon D5000
- Canon PowerShot S95

Choose Photo Rating:
- 11
- 36

Choose Aperture Range:
- 22

Choose ISO Range:
- 3201

Choose Photo Relevance:
- 38
- 97
• Photo Odyssey is an application for:
  ✓ Automatically integrating photograph data from multiple source websites on-the-fly
  ✓ Viewing relevant as well as highly rated photographs for points of interest in a city
  ✓ Building customized itineraries according to photographic preferences
  ✓ Spending lesser time searching for good photographs
  ✓ Helping amateur photographers take better shots

❖ Live demo: http://kalu.usc.edu:9999