Feature Extraction from Very High Resolution Multispectral Satellite Datasets

A compendium of hands-on exercises

Geospatial Technology Workshop for High School Students with stipends* [Funded by NSF]

*Stipends are only awarded to participants who attend all the (10) workshops and successfully complete all assignments.

Completed applications must be submitted by February 27, 2019

When:
1:00pm-4:00pm,
Every Saturday from
March 7- May 9, 2020

Where:
BCC Geospatial Center of the CUNY CREST Institute
Meister Hall, Rm. 330
2155 University Ave. Bronx, NY. 10453

For additional information please contact:
Dr. Sunil Bhaskaran [Director of BCC Geospatial Center]
Email: Sunil.Bhaskaran@bcc.cuny.edu

Inquiries by phone may be made to 718-289-5233 or 718-262-2889
BCC Geospatial Center of the CUNY CREST Institute- www.bcc.cuny.edu/geospatial/
**Workshop Highlights**
Managing our environment is important for our well-being and sustainable growth. Information about the vegetation, water bodies, land development, planning may be extracted from satellite imagery. Feature extraction is a technique that enables us to extract vital information about our earth at different scales and time periods. The workshops will expose and train participants in feature extraction techniques using industry standard software and hardware. They will also provide participants to interact and learn from experts in the field.

**Brief Description of Workshop Program**

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<tr>
<th>Date</th>
<th>Session Description</th>
<th>Mode:</th>
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<tbody>
<tr>
<td>March 7, 2020</td>
<td>Introduction to Image Analysis and Feature Extraction</td>
<td>Presentation, Video, Hands-on exercise</td>
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<tr>
<td>March 14, 2020</td>
<td>Introduction to Image Analysis and Feature Extraction</td>
<td>Presentation, Video, Hands-on exercise</td>
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<tr>
<td>March 21, 2020</td>
<td>Introduction to Unsupervised Classification of Multispectral satellite imagery</td>
<td>Presentation, Video, Hands-on exercise</td>
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<td>March 28, 2020</td>
<td>Challenge Task</td>
<td>Presentation, Video, Hands-on exercise</td>
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<td>April 4, 2020</td>
<td>Introduction to Supervised Classification of Multispectral satellite data</td>
<td>Presentation, Video, Hands-on exercise</td>
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<td>April 11, 2020</td>
<td>Challenge Task</td>
<td>Presentation, Video, Hands-on exercise</td>
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<td>April 18, 2020</td>
<td>Extracting features from satellite data P-I</td>
<td>Presentation, Video, Hands-on exercise</td>
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<td>April 25, 2020</td>
<td>Extracting features from satellite data P-II</td>
<td>Presentation, Video, Hands-on exercise</td>
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<td>May 2, 2020</td>
<td>Guest Lecture by expert from the Industry</td>
<td>Presentation, Video, Hands-on exercise</td>
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<tr>
<td>May 9, 2020</td>
<td>Final Presentation</td>
<td>Presentation, Video, Hands-on exercise</td>
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</table>
1. **Print Name:** __________________________  __________________________  _______
   LAST       FIRST       M.I.

2. **OSIS #:** __________________________

3. **Age:** _______  **Sex:** Female  Male  **Race/Ethnicity:** __________________

4. **Name of High School:** __________________________
   **Address of High School:** __________________________
   __________________________
   __________________________
   Grade Level: _______  **GPA:** _______

5. **Current Home Address:**
   __________________________
   __________________________
   __________________________
   __________________________
   __________________________
   __________________________
   __________________________
   __________________________
   
   **APT #**  **CITY**  **STATE**  **ZIP CODE**

6. **Contact Information:**
   
   _(______)__________________  __________________________
   MOBILE  EMAIL

7. **Emergency Contact:**
   
   __________________________  __________________________  _(______)__________________
   NAME  EMAIL  PHONE NUMBER
   __________________________  __________________________  _(______)__________________
   NAME  EMAIL  PHONE NUMBER
8. Questionnaire (Please answer the questions on the form)

How do satellite based maps help us in our daily lives? Give one example and briefly explain.
_____________________________________________________________________________________
_____________________________________________________________________________________
_____________________________________________________________________________________
_____________________________________________________________________________________
_____________________________________________________________________________________
Give an example of how you used computers in a school project?
_____________________________________________________________________________________
_____________________________________________________________________________________
_____________________________________________________________________________________
_____________________________________________________________________________________
_____________________________________________________________________________________
Which careers interest you the most? Is this workshop aligned to your broad career interests?
_____________________________________________________________________________________
_____________________________________________________________________________________
_____________________________________________________________________________________
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_____________________________________________________________________________________
Give two examples of features that may be extracted from a satellite image or a series of satellite images.
_____________________________________________________________________________________
_____________________________________________________________________________________
_____________________________________________________________________________________
_____________________________________________________________________________________
_____________________________________________________________________________________
9. **Comment by parents/guardian**: This technology workshop program is aligned to my daughter/son’s specific interests and is in line with her/his broader career pursuits.

_________________________________________________________________________________

_________________________________________________________________________________

Signature of the Parent/Guardian: ________________________________________________

Print Name: ____________________________

Contact phone#: _(____)_________________

10. **Reference Information** *(Provide a name, email id, and phone number of a teacher who knows you very well and can send us a recommendation letter describing your character and discipline in learning)*

 Name: ________________________________________________________________

 Email ID: ______________________________________________________________

 Phone number: ___________________________ Work/Office number: ______________________

Submit the completed application form *(as a scanned attachment)* to Dr. Sunil Bhaskaran, the director of the BCC Geospatial Center. His email id is Sunil.Bhaskaran@bcc.cuny.edu

Note: Only those applicants who are shortlisted will be contacted. Unless you get a written email confirmation you must not assume you are selected for the workshop.