Feature Extraction from Very High Resolution Multispectral Satellite Datasets

A compendium of hands-on exercises

Geospatial Technology Workshop for Middle School Students with stipends* [Funded by NASA-MISTC]

*Stipends are only awarded to participants who attend all the (12) workshops and successfully complete all assignments.

Completed applications must be submitted by February 27, 2019

When:
9:00am-12:00pm,
Every Saturday from
March 7- May 23, 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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<th>Date</th>
<th>Workshop Title</th>
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<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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<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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<td>March 21, 2020</td>
<td>Introduction to Unsupervised Classification of Multispectral satellite imagery</td>
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<td>March 28, 2020</td>
<td>Challenge Task</td>
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<td>April 4, 2020</td>
<td>Introduction to Supervised Classification of Multispectral satellite data</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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<td>May 9, 2020</td>
<td>Prepare for Final Presentation</td>
<td>Presentation, Video, Hands-on exercise</td>
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<td>May 16, 2020</td>
<td>Prepare for Final Presentation</td>
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<td>May 23, 2020</td>
<td>Family Café and Final Presentation</td>
<td>Presentation</td>
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APPLICATION FORM

SPRING 2020 GEOSPATIAL WORKSHOP
MIDDLE SCHOOL APPLICATION

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  (____)__________________

   _________________________________________________________________
   NAME  EMAIL  (____)__________________

   _________________________________________________________________
   NAME  EMAIL  (____)__________________
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?
_____________________________________________________________________________________
_____________________________________________________________________________________
_____________________________________________________________________________________
_____________________________________________________________________________________

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.