Software Disclosure & Abstract Form

This software was developed in the course of or under prime contract No. DE-AC02-05CH11231 between the U.S. Department of Energy and the University of California. This Disclosure is prepared for the Office of the Assistant General Counsel for Patents, U.S. Department of Energy, and for the U.S Department of Energy Software Center.

Accepted Date:

Summary of Software Disclosure
Title of Software Program

Short Name or Acronym:

Version No.:

Software Disclosure category
Please select the one category that best describes the invention.
Primary Technology Class

You select other, please explain.

Description Abstract

Primary Contact

Organization	Name	Email

Joint invention (non-LBNL inventors)
Please indicate if the software is joint between LBNL, and one or more external organizations or individuals.

If yes, please provide the Grant/Funding name and Funding Source/Contract # for the work that was performed on this Software disclosure.

Organization, Grant/Funding name, and Finding Source/Contract #

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Was any portion of the software written by a subcontractor or non-LBNL employee (including developers listed on this form who were not employed at LBNL at the time the code was written)?

     If Yes
         a. Please supply the name(s) and contact information in the below table.
         b. Please attach the actual Subcontract Agreement (the "contract") to this form.

Subcontractor Name and email

If you do not have the subcontract agreement, please explain.

Features, Advantages, and Interested Parties

Describe possible uses for the software, including commercial and non-commercial uses:

List any companies that are or would be interested.

Do you intend to distribute this code outside of LBNL or UC?

If yes, when and how do you intend to distribute? *An IPO licensing associate will contact you regarding distribution.*

Software Funding Source(s)

Number of Funding Sources for the Invention:

Does your DOE project specify Open Source Software (OSS)?
If yes, please explain further:

Details of funding agreement

Type of Funding	Project ID & Activity Code	B & R Code	DOE Funding Non-DOE funding Agreement Number	Sponsor Name	Program Manager's Name	Program Manager's Email
One from the choices						

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Additional funding information: DOE Funding at LNBL, Non-DOE Funding at LBNL
Accelerated Strategic Computing Initiative (ASCI) - DOE Funding at LBNL
Advanced Research Projects Agency-Energy (ARPA-E) - DOE Funding at LBNL
Artificial Intelligence and Technology Office - DOE Funding at LBNL
Exascale Computing Project (EDP) - DOE Funding at LBNL
Joint BioEnergy Institute (JBEI) - DOE Funding at LBNL
Joint Center for Artificial Photosynthesis (JCAP) - DOE Funding at LBNL
Joint Center for Energy Storage Research (JCESR) - DOE Funding at LBNL
National Alliance for Water Innovation (NAWI) - DOE Funding at LBNL
Office of Advanced Scientific Research (OASCR) - DOE Funding at LBNL
All Other DOE - DOE Funding at LBNL
Strategic Partnerships Project (Federal and Non-Federal) - Non-DOE Funding at LBNL
Cooperative Research and Development Agreement (CRADA) - Non-DOE Funding at LBNL
Consortium Agreement - Non-DOE Funding at LBNL
Other Funding Source - Non-DOE Funding at LBNL
No LBNL Funds or Facilities Used

You selected No LBNL or government funds, gifts, grants, or facilities were used – Please explain:

If "Other funding source" please explain:
If consortium, please list the name and if funded by it:

Do you reasonably expect future or continuing funding?
If Yes, please provide Continuing Funding Source:

Software History
A. History: Is the Software a later version, or a derivative of an earlier LBNL software version?
 If yes, please identify the version and describe:

B. Third Party Related and/or Auxiliary Software:
- Does the software *include* third party software?
- Does the software *require* the use of third party software (e.g. scripts)?
- Is the software a *derivative* work of third party software?
- Does the software program include non-open source code?
- Does the software program include third party proprietary information (e.g. libraries, data sets, Sponsor data)?

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It is important that you identify in the table below:

    a.   the name and version of the original third-party software
    b.   how the third-party software is used
    c.   if the third-party software is modified or unmodified
    d.   name(s) of the developer(s)/licensor of the third-party software
    e.   third-party software license type
    f.   third-party software repository link
    g.   If Yes, please fill out details in the table below.

Name of Original Software	Version	How used, e.g., Dynamic/Static library, tool	Modified or Unmodified?	Name of Developer/Licensor	License Type e.g., BSD, GPL, MIT	If to be distributed by LBNL or not	Repository Link.

Export Control

Review of software for export control restrictions is a DOE requirement managed by IPO. Where possible, please provide the information requested below.

  A. Prior Export Control Review? – Has the software or the project/contract funding the software's development (e.g. WFO, CRADA, etc.) been through export control review previously?

If yes, please provide the prior export classification determination and indicate the author of the determination.

  B. Does the software have a potential "dual-purpose" application in any of the following areas?
    Please indicate the best answer for each area:

    1. Military/Defense/National Security   Yes/No/Unknown
    2. Nuclear Proliferation (e.g. enrichment technology)   Yes/No/Unknown
    3. Chemical or Biological Warfare (e.g. toxins, infectious agents   Yes/No/Unknown
    4. Missile Technology   Yes/No/Unknown
    5. Communications Intercepting Technology   Yes/No/Unknown
    6. Aircraft   Yes/No/Unknown
    7. Encryption   Yes/No/Unknown
    8. Spacecraft or Satellites   Yes/No/Unknown
    9. Sensors or Lasers   Yes/No/Unknown
    10. Navigation or Avionics   Yes/No/Unknown
    11. Submersible Vessels, UAVs or Drones   Yes/No/Unknown
    12. Directed Energy or other Weapons   Yes/No/Unknown
    13. Marine   Yes/No/Unknown

  Please provide additional information here to explain any of your answers above:

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c. Foundational and Emerging Technology

1. Is the software geospatial imagery "software" "specially designed" for training a Deep Convolutional Neural Network to automate the analysis of geospatial imagery and point clouds, and having all of the following:

    i. Provides a graphical user interface that enables the user to identify objects (e.g., vehicles, houses, etc.) from within geospatial imagery and point clouds in order to extract positive and negative samples of an object of interest;

    ii. Reduces pixel variation by performing scale, color, and rotational normalization on the positive samples;

    iii. Trains a Deep Convolutional Neural Network to detect the object of interest from the positive and negative samples; and

    iv. Identifies objects in geospatial imagery using the trained Deep Convolutional Neural Network by matching the rotational pattern from the positive samples with the rotational pattern of objects in the geospatial imagery.

Technical Note: A point cloud is a collection of data points defined by a given coordinate system. A point cloud is also known as a digital surface model.

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PRODUCT MEDIA/FORMAT and LOCATION/TRANSMISSION

A. Hardware Requirements
- PC
- MAC
- Supercomputer
- Multi-platform
- Mainframe
- Workstation
- Unix Workstation
- Other Requirements

B. Software Requirements
1. OPERATING SYSTEM/VERSION:
2. COMPILER/VERSION:
3. LIMITATIONS/RESTRICTIONS/TIMING REQUIRMENT ESTIMATE:
4. OTHER SPECIAL REQUIREMENTS:
5. RELATED/AUXILIARY SOFTWARE:
6. TYPE(S) OF FILES:
   - Source Code
   - Object Library
   - Executable Module(s)
   - Compilation Instructions
   - Sample Problem Input Data
   - Control Information
   - Program Flow Data
   - Installation Instructions
   - Make File
   - Text Library
   - User Guide
   - Auxiliary Materials
   - Linking Instructions
   - Sample Problem Output Data
   - Program Flow Diagram
   - Programmer Documentation
   - Other

E. References: List citations of pertinent (including technical) publications by author, title, report number, barcode, or order number (if available) and date. References are to be broken down into two groupings: 1) reference documents provided with the submittal package and 2) additional background reference materials generally available.

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C. Code Location 1. Type DVD Electronic QUANTITY: CAPACITY: 2. FORMAT: PC MAC UNIX((Tar Format) SUN 3. LOCATION/TRANSMISSION: Repository Link:	
D. Documentation Type Information 1. TYPE: 2. FORMAT: 3. LOCATION/TRANSMISSION: Repository Link:	

BUSINESS REVIEW AND COPYRIGHT REGISTRATION INFORMATION

Developer(s) Information

Developers & electronic signatures
Contributor:

Division/Employer	Name	Email	Signature	Date
asdf		sadf	asdf	

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If this is a JBEI invention, write the developer's name and the organization each developer is with under JBEI, e.g. Jane Doe - Sandia National Lab, John Doe - UC Davis, etc. If LBNL is the organization under JBEI, please include LBNL/Division Name, e.g. John Doe - LBNL/CRD.

asdfsadffd

Developer electronic signatures - All developers will be sent a document to electronically sign to meet LBNL's signatory requirement.