Regulated Research Institutional/Industrial Setting Form (1C)

This form must be completed AFTER experimentation by the adult supervising the student research conducted in a regulated research institution, industrial setting or any work site other than home, school or field.

Student's Name(s) **SShamtej Singh Rana**

Title of Project WILDFIRE PREDICTION AND REDUCTION FOR THE WEST COAST OF THE USA USING A NEURAL NETWORK APPROACH

To be completed by the Supervising Adult in the Setting (NOT the Student(s)) after experimentation:

(Responses must be on the form as it is required to be displayed at student's project booth; please do not print double-sided.)

The student(s) conducted research at my work site:

1. Did you or your proxy (e.g. graduate student, postdoc, employee) mentor or provide substantial guidance to the student researcher?   ☑ Yes   ☐ No
   a. If no, describe your and/or your institution's role with the student researcher and his/her project (e.g. supervised use of equipment on site without ongoing mentorship and sign below.

   b. If yes, complete questions 2–5.

2. Is the student's research project a subset of your ongoing research or work?   ☐ Yes   ☑ No
   Use questions 3, 4 and 5 to detail how the student's project was similar and/or different from ongoing research or work at your site.

3. Describe the independence and creativity with which the student:
   a. developed the hypotheses or engineering goals for the research project

   The general idea of the application, i.e. that a neural network be used for forest fire detection was an initial engineering goal I provided. The initial engineering goal was to use multi-modal sensor data for detection using ANN. Since multi modal sensor data is difficult to analyze, the student was suggested to test the concept first with visual data. The software coding, and the use of regression and FFNN for climate data was proposed by the student.

   b. designed the methodology for his/her research project

   The methodology for the project was chosen by the student, while I conducted verification and assessment of the methodology along the development of the project.

   c. analyzed and interpreted data

   All data was analyzed and interpreted by the student. Neural Network analysis was done using methods from past papers. I checked and verified data analysis used by the student.

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4. Detail the student's role in conducting the research (e.g. data collection, specific procedures performed). Differentiate what the student observed and what the student actually did.

    Data acquisition and selection was done by the student through a climate database. Neural network development, coding, and testing was also done by the student. Designs and application of the network to designed sensor networks, and related methods, were all developed by the student.

5. Did the student(s) work on the project as part of a group?   ☐ Yes   ☑ No
    If yes, how many individuals were in the group and who were they (e.g. high school students, graduate students, faculty, professional researchers)?

I attest that the student has conducted the work as indicated above and that any required review and approval by institutional regulatory board (IRB/IACUC/IBC) has been obtained. Copies are attached if applicable.
I further acknowledge that the student will be presenting this work publicly in competition and I have communicated with the student research regarding any requirements for my review and/or restrictions of what is publicized.

Dr. Batu Krishna Chalise	BTChalise	Asst. Professor
Supervising Adult's Printed Name	Signature	Title
New York Institute of Technology		11/22/2019
Institution		Date Signed (must be after experi-mentation) (mm/dd/yy)
		bchalise@nyit.edu
101 Northern Blvd, Glen Head, NY 11545		
Address		Email/Phone