Pi Innovations

2023 DEC

Academic Partnership Proposal

Nurturing the New Generation For the Next Renaissance

Prepared For:

Birendra Memorial College CSIT

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Biratnagar/Dharan

ABOUT US

Pi Innovations is an organization that seeks to promote, educate and get Nepalese to explore the fields of Robotics, Automation, Artificial Intelligence and other technologies. Pi innovation has been working to provide a platform to students and tech enthusiasts all over Nepal since its inception.

Pi Innovations has committed to providing practical knowledge and creating an environment where our new generation can learn skills along with the theoretical knowledge and insights of what they are learning with the development of all the technologies for commercial use.

Sambhawana is a program/platform for our new generation of young people to explore and enhance their skills and creativity. It will help them to become what they are. Pi Innovations believes in improving the creativity and skills of the new generation. Pi Innovations will continuously work in the scope of technology, from kids to professionals, through various programs each year. Ultimately, it will help to take our nation forward in terms of technology. Sambhawana is also a fundraising program to fund the free education initiative of Pi Innovations, “Shikshyashala”. And this academic partnership is part of our initiative, "Sambhawana.”

Vision of Pi Innovations:

“Nurturing the New Generation For the Next Renaissance”

“Developing Technologies For the New change”

Mission:

1. Start innovative initiatives under Pi Innovations to promote practical education and the platform of technology in the new generation, like Sambhawana.
2. Become significant contributors to making the new generation’s Education and Learning better.
3. Develop modern technologies to help our nation build upon new technologies.

Objective of Pi Innovations:

1. Provide an experimental and practical foundation for the theoretical concepts introduced in the educational syllabus while having fun.
2. Familiarize the new generation with experimental tools, the scientific method, and electronic tools.
3. Initiate problem-solving and design-thinking skills in the new generation.
4. Introduce new concepts and techniques that have a wide application in practical learning.
5. Develop new technologies for commercial as well as other users.
6. Develop and promote new technologies that improve and optimize education in our country.

Some recent training and other activities under initiative “Sambhawana”:

- **7 Day Bootcamp on Robotics and Automation**

  Dharan Secondary School hosted this robotics boot camp for recent SEE graduates. It was a success, with almost 40 SEE graduate students from Dharan participating.

- **8 Day Python Training**

  Mahendra Morang Adarsha Multiple Campus in Biratnagar hosted this session for BSc. CSIT program students enrolled in their third semester. The program focused on theoretical as well as practical principles. The training benefited nearly 35 students and resulted in students effectively working on seven distinct projects.

- **8 Day Django Training**

  Mahendra Morang Adarsha Multiple Campus hosted this training for students in the fifth semester of the BSc. CSIT program. The training helped over 32 students and resulted in students effectively working on eight distinct projects.


- **6 Day Python Training**

  Mahendra Morang Adarsha Multiple Campus hosted this training for students in the third semester of the BIT program. The training helped over 38 students and resulted in students effectively working on nine distinct projects.

- **6 Day WordPress Training**

  Mahendra Morang Adarsha Multiple Campus hosted this training for students in the first semester of the BIT program. The training helped over 40 students and resulted in students effectively working on nine distinct projects. This training specifically focused on successfully building a full-fletch WordPress website by the students.


- **5 Day Robotics Training**

  Itahari Namuna College hosted this training for students studying +2. More than 30 students benefited from this training. This training was focused on building basic robots and understanding the basics of robotics.

- **5 Day Robotics Training**
  Sushma Godawari College hosted this training for students studying +2. More than 30 students benefited from this training. This training was focused on building basic robots and understanding the basics of robotics.


- **6 Months long Python & Django Training**
  Birendra Memorial College - CSIT hosted this training as part of the Academic Partnership Program 2023 for 5th-semester students. During the training, students were proficient in **Python programming** and successfully implemented it within the "**Django**" framework to create various web projects. The program also equipped students with the knowledge of automating various aspects of their daily lives.

Academic Partnership Plan I

We are looking forward to collaborating with different educational institutions to upskill the students. We would be closely working with the institutions to providing

- Workshops
    - There will be at least **two workshops**.
    - Workshops will last **3-4 days each**.
- Bootcamps
    - There will be at least **four bootcamp**.
    - Bootcamps will last **1-2 days** consisting of at least **3-4 hours per day**.
- Intra-institutional competitions.
    - There will be at least **two competitions** for each workshops like
        - **Hackathons**
        - **Robotics competitions**
        - **Poster presentations**
- Exhibitions and Project Demonstrations
    - **Exhibitions** include all the projects built by the students themselves within this program.

We would be covering several topics within this collaboration, including

- Front-end Development (Vue, React, Flutter)
- Backend Development (Django)
- Mobile App Development (Flutter)
- Data Analysis (SQL, Excel, Python, Power BI)
- Robotics, IoT and Automation
- Block-Based Programming (Game Development, App Development, Animation)
- Entrepreneurship
- Machine Learning and Artificial Intelligence
- Python Programming
- Wordpress
- STEAM Education
- Cloud Computing (AWS)

The topics of the workshops and bootcamps are subject to institutional discretion.

We are working towards a yearly contract collaboration that benefits both parties. We believe in adding value to your organization in return for valued compensation, subject to negotiation between both parties. But for the purpose of initial valuation, we value our service at around **Rs. 1,20,000 /-** which is subject to negotiation.

Academic Partnership Plan II

We are looking forward to collaborating with different educational institutions to upskill the students. We would be closely working with the institutions to providing

- Workshops
    - There will be one **workshop**.
    - Workshops will last **3-4 days each**.
- Bootcamps
    - There will be at least **two bootcamp**.
    - Bootcamps will last **1-2 days** consisting of a minimum **3-4 hours per day**.
- Intra-institutional competitions.
    - There will be **one competitions** for each workshops like
        - **Hackathons**
        - **Robotics competitions**
        - **Poster presentations**
- Exhibitions and Project Demonstrations
    - **Exhibition** includes all the projects built by the students themselves within this program.

We would be covering several topics within this collaboration, including

- Front-end Development
- Backend Development
- Mobile App Development
- Data Analysis (SQl,Excel, Python,Power BI)
- Robotics, IoT and Automation
- Block-Based Programming (Game Development, App Development, Animation)
- Entrepreneurship
- Machine Learning and Artificial Intelligence
- Python Programming
- Wordpress
- STEAM Education
- Cloud Computing

The topics of the workshops and bootcamps are subject to institutional discretion.

We are working towards a yearly contract collaboration that benefits both parties. We believe in adding value to your organization in return for valued compensation, subject to negotiation between both parties. But for the purpose of initial valuation, we value our service at around **Rs. 60,000 /-** which is subject to negotiation.

Academic Partnership Plan III

We are looking forward to collaborating with different educational institutions to upskill the students. We would be closely working with the institutions to providing

- Workshops
    - There will be **one workshop**.
    - Workshops will last **3-4 days each**.
- Bootcamps
    - There will be **one bootcamp**.
    - Bootcamps will last **1-2 days** consisting of a minimum **3-4 hours per day**.
- Intra-institutional **competitions** or **Exhibitions & Project Demonstrations**
    - There **one competitions** for a workshop like
        - **Hackathons**
        - **Robotics competitions**
        - **Poster presentations**
    - Exhibition includes all the projects built by the students themselves within this program.

We would be covering several topics within this collaboration, including

- Front-end Development
- Backend Development
- Mobile App Development
- Data Analysis (SQL, Excel, Python, Power BI)
- Robotics, IoT and Automation
- Block-Based Programming (Game Development, App Development, Animation)
- Entrepreneurship
- Machine Learning and Artificial Intelligence
- Python Programming
- Wordpress
- STEAM Education
- Cloud Computing

The topics of the workshops and bootcamps are subject to institutional discretion.

We are working towards a yearly contract collaboration that benefits both parties. We believe in adding value to your organization in return for valued compensation, subject to negotiation between both parties. But for the purpose of initial valuation, we value our service at around **Rs. 40,000 /-** which is subject to negotiation.

Project Guidance and Training

We are looking forward to collaborating with different educational institutions to upskill the students. We would be closely working with the institutions to providing the training on following topics:

Python Training Syllabus

1. **Python Basics:**
    a. Variables and Types
    b. Lists
    c. Basic Operators
    d. String Formatting
    e. Basic String Operations
    f. Conditions
    g. Loops
    h. List Comprehensions
    i. Functions
    j. Lambda functions, Map
    k. Exception Handling
    l. Classes and Objects
    m. Dictionaries, Sets, Tuple
    n. Modules and Packages

2. **Git and GitHub**
3. **Django Framework:**
    a. Introduction to front end
    b. Introduction to django
    c. Displaying hyperlinks - project
    d. Creating a website - project Creating administration panel
    e. Django forms creation
    f. Django template language
    g. Integrating bootstrap into django
    h. Sessions and cookies
    i. Using other databases in django
    j. Django restful api
    k. Live project implementation

4. **Machine Learning**
    a. Numpy
    b. Pandas
    c. SciPy
    d. Matplotlib
    e. Train/Test
    f. Classification Algorithms
    g. Confusion Matrix
    h. Regression, MLP, Decision Trees, CNN
    i. Project in ML

By the end of the training students shall be able to complete not less than following projects:

1. Classification of Diabetes using Machine Learning
2. Online Auction System
3. Movie Recommendation System
4. Math Problem Solver using CNN

Duration:

The duration of the training shall last for around 20 days, in spite of the duration projects support and guidance shall be subjected to requirement.

Mode of Training:

The mode of training shall be physical and virtual both as per the requirement and convenience.

Remuneration:

The total cost of the training and project support is Rs. 20,000 per group exclusive of VAT. Therefore, the total cost will be Rs. 20,000 * 4 = Rs. 80,000

Main Benefits of Our Program and Project:

Aligned Thinking and Learning
Every assignment should elicit suggestions for desired criteria, subjects, and skills that students ought to possess. What learning and thinking do we want our instruction to match when developing a project design? Even though this can be, and usually is, centered on content and standards, this may not always be the case with projects. A highly balanced approach to material and skills and possibly even emphasizing thought will help students acquire content more thoroughly. The big emphasis here is that there is intentionality in planning on the part of the teacher/facilitator about the thinking and learning, whatever that may be, that students will need to know and demonstrate understanding of to complete the project and challenge.

Rich Inquiry
The project provides multiple opportunities & needs for high-level questioning by students & teachers. Throughout a project, we want to see students and teachers ask questions. Starting with an open-ended Driving Question aligned with the desired thinking and learning, students might have questions for an outside expert, questions for fellow students around a text or other resources, questions to help lead thinking of others or just clarifying questions. Moving from a classroom where answers are the norm, rich inquiry yields profound thinking and creativity as one idea builds upon another.

Authenticity
Students (and teachers) need to be clear about the product, purpose, and audience. Connecting the product to an authentic purpose and audience allows another leverage point that is missing if the work is just “for school”. Instead of asking how many points they earned or what their grade is, authenticity shifts those inquiries to how well the work serves its purpose and needs. While we want to use the process and the products of PBL to measure learning, the addition of authenticity helps to increase student interest and engagement and can empower them as they do real, meaningful, and purposeful work that transcends traditional schoolwork.

Autonomy
The project provides opportunities for students' voice & choice in the process & product. If we want commitment and engagement, not just compliance, self-direction is better. As teachers and students grow in a PBL environment, there will be a culture shift where teachers are increasingly releasing “control” and becoming more facilitators. This autonomy can show up in several ways allowing for increased student inquiry and choice over what to investigate, how to uncover the necessary learning and how they will show they know and understand.

Meaningful Assessment
The project guides teaching & learning using purposeful formative and summative assessments. Ask most students how they feel about assessment, and you’re likely to get less than a positive response. Using an assessment as a tool to inform next steps and needed areas of improvement can be exciting, especially when the work is authentic, meaningful and purposeful. It can also originate from multiple sources like self, peers, outside experts, and teachers.

Learning by Doing
The project provides opportunities & reasons for students to create craftsman-like products. We want students to produce high-quality work and thinking. But how often do we provide them with authentic challenges they see as worthy of refinement and improvement? Students seek to improve their products to meet the needs of an audience instead of just playing with the institute. So, quality project-based learning empowers students by engaging them in processes of reflection and revision.

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