KMITL INTERNSHIP/EXCHANGE PROGRAM APPLICATION FORM

(Fill-out in typing or written, English)

1. Name of Applicant	Mrs. Salunke Snehal Nimba /_____/ RBT19CE030 (Full name) (Nickname) (Student ID) *(must match Passport)*
2. Date of Birth	17th August 2000 (Day) (Month) (Year) Age: 21 (*on application date*)
3. Nationality	Indian
4. Mailing Address Telephone No. Mobile Phone No.	Plot No.20, Behind Vaibhav mangal karyalay, Bhadgaon road, Chalisgaon, 424101. +( ) _____ +(91) 8421641749
E-mail Address	snehalsalunke1725@gmail.com

5. Field of Study *	Civil Engineering	GPA *	10
6. Department/ Faculty	Civil Engineering	School Year	Third Year (Pursuing)

7. Home Institution	JSPM's Rajarshi Shahu College of Engineering, Pune, Maharashtra, India.
8. Host Institution	School of Engineering King Mongkut's Institute of Technology Ladkrabang
9. Period of Internship/Exchange	
10. Three Topics or Interested Subjects to learn in this e-Internship Program (Do not specify the name of the advisor) *	1. Settlements caused by Underground Construction and Tunneling, Using Artificial Neural Networks for Predicting Settlements 2. Pollution Control and Prevention, Biological Wastewater Treatment, Sludge Treatment 3. Traffic Engineering, Highway Engineering, Urban Infrastructure and Transportation Planning

11. Language Proficiency Level and/or Score *(as applicable)*		Excellent	Good	Fair	Poor	Score (if any)
	☒ English	☒	☐	☐	☐	
	☒ Hindi	☒	☐	☐	☐	
	☒ Marathi	☒	☐	☐	☐	

12. Purpose of joining Internship/Exchange Program	The main purpose of joining the internship is to explore and implement what I learned during my school and graduation programs. This gives me platform to set my own career path in the right direction. It provides real world experience and enables me to put everything that I have learned so far to actual action. And one of the major advantages of an internship is that I'll be able to network and establish relationships with working professionals in your field. It will also help me to create my own career path.
13. Study Plan (Please write about what engineering research/ study that you are interested to do, as much in-detailed as you can) *	Around the world, tunneling has become a part of life. In the modern era, tunneling and underground works constitute a major portion of development of rail tunnels, road tunnels, hydro power, mining, strategic oils reserves, water supply & sewerage, coal mines, nuclear power projects and urban area metro rail network as well as strategic secret escape routes etc. It has been observed that tunneling projects faces many challenges. Complex geological conditions affect major of the projects. Project specific Ground Improvement strategies and expertise is the need for such type of underground tunneling projects. As more and more land become subject to urban or industrial development, good construction sites and borrow areas are difficult to find and the soil improvement alternatives becomes the best option, technically and economically. Also, for the preparation of ground for new construction projects and to reduce the risk of liquefaction in areas of seismic activity. Growing population generating a lot of waste around entire globe leading towards adverse effect on human health and degrading the environment. Also, more demands from the population quenching the available resources. Hence, waste management and waste recycling have been extreme requirement nowadays. Hence, this fascinates me to orient my research / study in line with exploring above areas of engineering. To accomplish this research, I will adapt a study plan in the form of following points. - A Guide from KMITL - This will help me direct in the right direction. - Reference materials, case studies, Published Research paper, etc. - College faculties and contacts from Industries. - An opportunity to get work on live projects.
14. Brief self-introduction *(hobbies, past Experiences, activities, etc.)*	I am a team player and art loving person with abilities of leadership, adaptability, and sincerity apart from my excellent work in academics. I'm an active volunteer for almost all the program and events that takes place in our institute and provides an active role in making it a success. GIS platforms are the interest areas for me as upcoming learning. I worked on project 'Highway Safety of NH-52'.

	Currently I'm working on ASCE's Concrete Canoe competition (An International Competition) and working on 12 United Nations sustainable Goal out of 17 on behalf of Shaashwat Club (An Eco-Sustainable Club) to make society/nation sustainable. Also working on rural areas which were adopted by our college on behalf of UBA (Unnat Bharat Abhiyan) and I'm leading it as group leader and also, working on our official college magazine "Kalavishkar". In personal life, I'm getting involved with social awareness events happening around my place.
15. Reference/Contact Person	Mr./Ms. Dr. Binod Kumar (Senior Member IEEE &ACM) Position/Relationship: Dean of International Relations Workplace: JSPM's Rajarshi Shahu College of Engineering, Pune, Maharashtra, India, 411033. Telephone:_____Mail Address: dean_ir@jspmrscoe.edu.in

Signature of Applicant _ -

Date: 28th Dec 2021

Note: Application will not be accepted if without official nomination from home university's international office.

Research Proposal

1. SETTLEMENT CAUSED BY UNDERGROUND CONSTRUCTION AND TUNNELING USING ARTIFICIAL NEURAL NETWORKS FOR PREDICTING SETTLEMENTS

For many years, deep learning technologies have been successfully applied in many different sectors-civil engineering included. In fact, machine learning technique took the center stage in the industry long ago with the emergence of complex buildings such as skyscrapers. Now more than ever, we see the application and development of AI in the construction industry, which includes the use of intelligent algorithms, big data, and deep learning machines that have transformed productivity performance.

Shallow tunnelling through densely populated areas usually associated with undesirable ground movement and damage to adjacent buildings. Consequently, o minimize tunnelling effects on adjacent structures in these areas, close monitoring and precautionary measures are necessary. An accurate prediction of surface settlement due to tunnelling is a principle step towards a precautionary measure. Many parameters are contributed to the ground movements during tunnelling. In fact, non-linear relationships are established between these parameters and ground movements. Computational approaches are used world-widely to predict surface settlement due to tunnelling. However, due to complex ground conditions in many cases, these methods cannot take into account all of the relevant parameters and therefore predict surface settlement incorrectly. Recently, there are efforts to improve the existing prediction methods besides exploring into new methods of prediction. Artificial neural network has revealed as a valid approach to analyse geotechnical problems and is mainly able to cover the limitation of existing approaches. This paper presents an approach based on artificial neural network to predict surface settlement due to NATM tunnelling in Karaj Urban Railway, Iran. The obtained results demonstrate that artificial neural networks are an applicable technique for predicting ground behavior due to tunnelling. By Joining This Program, I would like to gain more exposure towards prediction of surface Settlements Induced By Tunnelling Based On Artificial Neural Networks.

2. Pollution Control and Prevention, Biological Wastewater Treatment, Sludge Treatment :

Wastewater, or sewage, originates from and home wastewaters, industrial wastes, animal wastes, rain runoff, and groundwater infiltration. wastewater treatment engineering, which focus on the biological and chemical treatment processes. It aims at providing a brief and obvious description of the treatment methods, designs, schematics, and specifications. These research also give answers an important question on how the different processes are interrelated and the correct order of these processes in relation to each other.

The treatment of wastewater subsequent to the removal of suspended solids by microorganisms such as algae, fungi, or bacteria under aerobic or anaerobic conditions during which organic matter in wastewater is oxidized or incorporated into cells that can be eliminated by removal process or sedimentation is termed biological treatment. Biological treatment is termed secondary treatment. Chemical treatment, or tertiary treatment, using chemical materials will react with a portion of the undesired chemicals and heavy metals, but a portion of the polluting material will remain unaffected.The cost of chemical additives and the environmental problem of disposing large amounts of chemical sludge make this treatment process deficient Alternatively, the biological treatment must be implemented. This treatment process implements naturally occurring microorganisms to transform the dissolved organic matter into a dense biomass that can be separated from the treated wastewater by the sedimentation process. In fact, the microorganisms utilize the dissolved organic matter as food for themselves, where the generated sludge will be far less for chemical treatment. In practice, therefore, secondary treatment tends to be a biological process with chemical treatment implemented for the removal of toxic compounds.

The goals of treating the wastewaters are:

1. Transforming the materials available in the wastewater into secure end products that are able to be safely disposed off into domestic water devoid of any negative environmental effects;
2. Protecting public health;
3. Ensuring that wastewaters are efficiently handled on a trustworthy basis without annoyance or offens.

4. Recycling and recovering the valuable components available in wastewaters. By Joining This Program, I would like to gain more information with actual knowledge.

3. Traffic Engineering, Highway Engineering, Urban Infrastructure and Transportation Planning

Typical traffic engineering projects involve designing traffic control device installations and modifications, including traffic signals, signs, and pavement markings. Examples of Engineering Plans include pole engineering analysis and Storm Water Prevention Programs (SWPP). However, traffic engineers also consider traffic safety by investigating locations with high crash rates and developing countermeasures to reduce crashes. Traffic flow management can be short-term (preparing construction traffic control plans, including detour plans for pedestrian and vehicular traffic) .

This research deals with issues of road administration in municipalities in terms of the requirements for engineering renovations of urban communications networks. The goal is to declare an end to the degradation of the quality and service of local roads in cities. The reason is the lack of funding. The engineering analysis should demonstrate the need to make an informed request for reconstruction of local roads in our towns and cities. The aim of this paper is to describe the processes that are related to specific engineering work but are closely linked to the performance of the preparation on both sides, i.e., the administration versus the design. Why do we passively observe the gradual destruction of the quality of our local roads in the cities? Before our eyes the road constructions of roadways crumble, on the other hand, the level of their transport service on them only presents us with traffic jams. How can you know the status of the background of our streets and their pavements in an urbanized area? A couple of technical studies oriented towards the advance of public transport, especially for Bratislava, the capital of Slovakia which were based on traffic modelling together with engineering designs .

. By Joining This Program, I would get to know about new methods , systems which includes Artifical engineering techniques and some sensors system for preventing traffic and highway safety .

Sr. No : 21-4529

Jayawant Shikshan Prasarak Mandal's
Rajarshi Shahu College of Engineering
S. No. 80, Pune-Mumbai By Pass Highway, Talhawade, Pune 411 033, India
(An Autonomous Institute Affiliated to Savitribai Phule Pune University, Pune)
(Formerly University of Pune)

Statement of Grades

Name : SALUNKE SNEHAL NIMBA

PRN : RBT19CE030   Mother's Name: PRATIBHA

Programme : BACHELOR OF TECHNOLOGY

Branch : CIVIL ENGINEERING

Class : S.Y.   Semester : IV

Month & Year of Exam : Aug 2021   Date of Declaration of Result : 16 Aug 2021

Sr. No.	Course Code	Course Name	Credit	Grade
1	CE2107	FLUID MECHANICS	4	O
2	CE2108	ANALYSIS OF STRUCTURE I	4	O
3	CE2109	ENGINEERING GEOLOGY	4	O
4	CE2110	CONCRETE TECHNOLOGY	4	O
5	CE2111	BUILDING PLANNING AND ARCHITECTURE	5	O
6	CE2112B	PROBLEM BASED EXPERIENTIAL LEARNING	1	O
7	CE2113	AUDIT COURSE-II: ONLINE CERTIFICATION	-	PP
8	HS2104	HUMAN VALUES AND ETHICS	1	O

Semester Grade Point Average			Cumulative Grade Point Average		
Credits Registered	Credits Earned	SGPA	Credits Registered	Credits Earned	CGPA
23	23	10.00	92	92	8.80

Cumulative Result Status: PASS

DATE : 13 Nov 2021

CONTROLLER OF EXAMINATIONS

SNEHAL SALUNKE

PURSUING CIVIL B.Tech

SUMMARY

"I am an energetic and ambitious person who is developing strong and responsible approach to put maximum efforts to complete the task or activities that I undertake, or I have been assigned. And looking forward to build my carrier in an Infrastructure Discipline."

EDUCATION

May 2019
Savitribai Phule University, Pune
Bachelor of Technology, Civil,
(SGPA: 10/10)
(CGPA: 8.80/10)

Extracurricular Activities

- Associated with UBA

- Working As a Technical Head in ASCE

- Secretory of CESA(College club)

- Editor of our College Magzine.

Pursuing Courses

Internet of thing and Embedded System:
- 1.What is the Internet of things (IOT)?
- 2.Embedded System.
- 3.Hardware and Software.
- 4.Networking and Internet.

Planning & Design of Sanitation Systems and Technologies:

CONTACT
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Email: snehalsalunke1725@gmail.com

LinkedIn: https://www.linkedin.com/in/snehal-salunke-91b90a1a8

PROFESSIONAL EXPERIENCE

Introduction to Machine Learning:
- Machine Learning Definition and Basic
- Learning Model
- Regressions
- Clustering
- Testing the Algorithm and the Network
- Deep Learning
- Recommender System
- Components of Reinforcement Learning

Designing a Machine Learning System

Environmental Protection and Sustainability:
- 1.Biodiversity and Ecological Determinants.
- 2. Conservation Biology and Species Reintroduction.
- 3. Open Lands and Agroecology.
- 4. Air Quality and Pollution.
- 5. Water Quality and Greywater Reuse.
- 6. Green Sustainable Building.
- 7. Urban Sustainability.

Introduction to Project Management:
- 1: What is Project Management
- 2: Phases of project.
- 3: Understanding type of project.
- 4: major affecting factors in project .

- Introduction to sanitation Planning and system approach.
- Sanitation system and technologies.
- Urban sanitation solution.
- Urban Sanitation tools.

PROJECTS:

Title of the Project

" Prevention of collision at intersection and curvature of Highway : A case study at Dhule – Solapur National Highway , kannad ,dist. Aurangabad. "

1.Intersections are particularly dangerous because they create many of the common conditions known to cause auto accidents. Usually, intersections have multiple entry points, high traffic and pedestrian volume, poor visibility due to other structures or weather, inadequate signage, and drivers aggressively rushing to their next destination.
2.   intersection-related crashes occur more often than most people think. through this case study i give the cases and no of prevention methods methods like GPS SENSORS , CAS (collision avoidance system) and some preventive measures to reduce the no. of accidents .

Skills
- C++
- Leadership.
- Well Verse with Auto CAD.
- Good Knowledge of Basic Computers And Internet.
- Good Problem Solving.
- Written Communication Skills
- Oral Communication Skill.
- Leadership Skill.
- Team Work.
- Problem Solving Skills.
- Negotiation Skills
- HTML.
- Python.

- 5: role and responsibilites in project.

Global Environmental Management:
- 1.Global trends
- 2. Environmental Management
- 3.Utility Management
- 4.Technologies for the built Environment
- 5.Other Technologies

Software Skills:
- MS Office.
- MS Word.
- Ubuntu.
- MS Excel.
- Autocad.
- Revit.
- Sketchup.
- Civil 3D.

STRENGTHS
- Strong Communication Skills.
- Able to Work in Fast-Paced.
- Proactive Nature.
- Continuous Learning & Improvements.
- Hold Self-Accountable to Achieving Goals And Standards.
- Self-Confident and Strongly Determined.

HOBBIES
- Internet Surfing, Social Worker , chess player.
- LANGUAGES

    English, Hindi, Marathi , German , Spanish (basic)

Declaration: The undersigned, certify that to the best of my knowledge and belief, this CV correctly describes me, my qualifications, and my experience. I understand that any wilful misstatement described herein may lead to my disqualification or dismissal, if engaged.

Place: Pune   Date: 06/01/2022