



Sikkim Institute of Science and Technology
MARCH | ISSUE# 9

TW Tech-Wave

Monthly E-Newsletter

VISION

“Excellence in Technical Education and Research”

MISSION

“Developing SIST into an Institution of great learning by providing an ambiance for the emergence of engineers, innovators, leaders and entrepreneurs who would contribute towards the betterment of society”

OBJECTIVES

- To develop state-of-the-art educational infrastructure conducive to higher learning for students.
- To establish an excellent teaching-learning environment while enriching project-based knowledge to facilitate the development of the students’ all-around personalities.
- To promote capacity development programs for the skilling, upskilling, and reskilling of faculties and students by involving practitioners from diverse fields to enhance leadership qualities.
- To create opportunities for students’ intellectual engagement in interdisciplinary research and innovative collaborations at the local and national levels.



Meet our Crew!

Mr. Asish Shakya	Mr. Hom Nath
Mr. Dharkan Bhattarai	Mr. Amar Sanyasi
Mr. Ashim Panchakoti	Mr. Dewas Rai
Mr. Pranab Chettri	Mr. Andrew Rai



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https://twitter.com/SIST_2018

INSTITUTIONAL HIGHLIGHTS

1 Hon'ble Education Minister Visits SIST Campus

Sikkim Institute of Science and Technology (SIST) welcomed Shri Raju Basnet, Hon'ble Minister for Education, Sports & Youth Affairs, Law and Parliamentary Affairs, along with senior officials from the Education Department. The delegation included Shri Sandeep Tambe, Principal Secretary; Smt. Bibhuti Pradhan, Special Secretary; and Shri Yogendra Pradhan, Superintendent Engineer, among other officials.

They were received by Prof. Dr. B.B. Pradhan, Principal cum Director of SIST. During the visit, the delegation toured the institute's laboratories, library, and other academic facilities, and interacted with faculty members while reviewing institutional resources and ongoing developmental initiatives. The visit reflects the Government's commitment to strengthening technical education and infrastructure development in the state.



ACADEMIC & RESEARCH EXCELLENCE

2 SIST Organizes STTP on

“Pedagogical Issues in Teaching Learning” in Collaboration with NITTTR Kolkata

Sikkim Institute of Science and Technology (SIST), in collaboration with the National Institute of Technical Teachers' Training and Research (NITTTR), Kolkata, is organizing a Short Term Training Programme (STTP) on “Pedagogical Issues in Teaching-Learning” from 30 March to 3 April 2026. The programme is being conducted under the convenorship of Prof. (Dr.) B. B. Pradhan, Principal-cum-Director of SIST.

Coordinated by Dr. Nirmal Kumar Mandal and Dr. Sukanta Kumar Naskar (NITTTR Kolkata), along with Ms. Uden K. Sherpa and Dr. Parita Basnet (SIST), the training aims to enhance effective teaching practices and outcome-based education in technical institutions. The programme will cover areas such as curriculum development, classroom and laboratory management, assessment techniques, integration of AI and Machine Learning in teaching, and NBA accreditation with CO-PO mapping. Participants completing the programme with at least 80% attendance will receive a certificate from NITTTR.

EVENTS

Construction and Building Materials 119 (2026) 145913



Experimental investigation of integrating and optimizing rice husk with polyurethane foam for fabrication of a sandwich panel and utilizing statistical metric for application in the construction sector

Perna Sharma^{a,*}, L. Krishnaraj^{b,c}, Sasitharan Nagapan^d, V.R. Prasath Kumar^{b,c}

^a Department of Civil Engineering, Sikkim Institute of Science and Technology, Chitapani, South Sikkim, The institute is affiliated to Central University Sikkim, Gangtok, Sikkim, India; ^b Department of Civil Engineering, College of Engineering and Technology, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu 605003, India; ^c Faculty of Civil Engineering and Architecture, Universiti Tera Sejahtera (UTRS), Kota Bharu, Kelantan, Malaysia; ^d Faculty of Civil Engineering, Universiti Teknikal Malaysia Melaka (UTeM), Durian Tunggal, Melaka, Malaysia

ARTICLE INFO

Keywords:
Polyurethane foam
Rice husk
Construction
Building
Sound absorption coefficient
Thermal properties
Artificial neural network

ABSTRACT

The growing emphasis on sustainable construction has led to the incorporation of agricultural waste materials into building components. This research utilizes waste Rice Husk (RH) as a replacement for Polyurethane Foam (PU) composed of A (isocyanate) and B (polyol) with a mixing ratio of A: B at 1:1.2 within a Calcium Silicate Board (CSB) as face sheet. The PU was replaced with RH at varying levels of 10, 20, 30, 40, and 50% to determine the most effective replacement percentage. The research investigates the visual characteristics, mechanical strength, water absorption, acoustic properties, and thermal conductivity. The findings indicate that replacing PU with 30% RH improved compressive and flexural performance, owing to the optimum percentage. Replacing PU with RH decreases cell size, enhances heat resistance, and acoustic performance up to a frequency of 1600 Hz. Using the experiment result, the linear regression and Artificial Neural Network model are used to validate the experimental result based on the appropriate coefficient of determination (R^2) threshold, and obtained an accuracy of 93.7%.

About Us

Sikkim Institute of Science and Technology

SIST is the only State Engineering Degree College of Sikkim located at Chitapani, South Sikkim. The institute is affiliated to Central University Sikkim, Gangtok, Sikkim, India. The institute is known as Sikkim University. The institute was established in 2008 under RUSA project, and it offers U-Edch in Civil Engineering and Computer Engineering. SIST is AICTE approved state government engineering college.

National Institute of Technical Teachers' Training and Research (NITTTR), Kolkata

The National Institute of Technical Teachers' Training and Research Kolkata (NITTTR Kolkata) strives to be a leading resource institution dedicated to promoting excellence in technical education, management education, and vocational education and training. Established on January 11, 1965, as the Technical Teachers' Training Institute (TITI), Calcutta, by the then Ministry of Education, Government of India, it was the first institute of its kind in the country and has since played a pioneering role in developing quality technical educators.

Conducted by:
National Institute of Technical Teachers' Training and Research (NITTTR), Kolkata & Sikkim Institute of Science and Technology

Programme Co-ordinator:
Prof. (Dr.) B. B. Pradhan, Principal cum Director, SIST

Programme Co-ordinators (NITTTR Kolkata):
Dr. Nirmal Kumar Mondal & Dr. Sukanta Kumar Nayak

Programme Co-ordinators (SIST Chitapani):
Ms. Uden K. Shetty & Dr. Partha Banerjee

CONTACT AND REGISTRATION

Scan the QR Code for Registration



30 March - 3 April 2026

Organized by:
Sikkim Institute of Science and Technology in collaboration with
National Institute of Technical Teachers' Training and Research (NITTTR), Kolkata

SHORT TERM TRAINING PROGRAMME (STTP)

Pedagogical Issues in Teaching-Learning



3 SIST Faculty Publishes Research Paper in High Impact Journal

Dr. Perna Sharma, Assistant Professor in the Department of Civil Engineering at Sikkim Institute of Science and Technology (SIST), has published a research paper in the reputed journal



Construction and Building Materials (Impact Factor: 8). The paper explores the use of rice husk, an agricultural waste material, integrated with polyurethane foam to develop eco-friendly sandwich panels for construction applications.

The study evaluated mechanical strength, thermal properties, water absorption, and acoustic performance, finding that a 30% replacement of polyurethane with rice husk provides optimal results. The research also utilized regression analysis and Artificial Neural Network (ANN) modeling, achieving high prediction accuracy. This work contributes to sustainable infrastructure development by promoting innovative use of agricultural waste in construction materials. The institute congratulates Dr. Perna Sharma on this notable academic achievement

4 Orientation Session on EMMIS Higher Education Platform Held at SIST

NETspeq conducted an online orientation and demonstration session for the staff and students of Sikkim Institute of Science and Technology (SIST) on the EMMIS Higher Education platform. The session was held in the presence of Prof. Dr. B.B. Pradhan, Director of SIST, and introduced administrators, faculty members, and students to the platform's key features, including institutional data management, academic workflows, role-based access, and user-specific functions. The initiative aims to support effective implementation of the system and strengthen digital governance, improving efficiency and transparency in academic and administrative operations at SIST.



EVENTS

WORKSHOPS & ACADEMIC EVENTS

5 Webinar on “The AI Revolution” Organized on National Science Day at SIST

The Institution’s Innovation Council (IIC), in collaboration with the Science Club (Meteorite), organized a webinar on 28 February 2026 on the occasion of National Science Day. The session, themed “The AI Revolution: A National Science Day Special Session,” was conducted under the guidance of Prof. Dr. B.B. Pradhan, Principal-cum-Director of Sikkim Institute of Science and Technology (SIST).

The webinar highlighted emerging developments in Artificial Intelligence and its growing impact across various fields. The resource persons for the session were Harsh Kumar Karan (6th Semester, Computer Engineering) and Pushkar-raj (8th Semester, Computer Engineering), who delivered technical presentations and shared insights on recent AI advancements.

Students from the Computer Engineering and Civil Engineering departments, along with faculty members and academic support staff, actively participated in the session. The event was coordinated by Dr. Parita Basnet, IIC President and Science Club Coordinator, and concluded successfully, reinforcing the institute’s commitment to innovation and academic excellence.



6 Workshop on Ethical

Use of Artificial Intelligence Conducted at Sikkim Government B.Ed. College, Soreng

On 23rd February 2026, the ICT Committee of Sikkim Government B.Ed. College, Soreng organized a one-day workshop on the topic “Ethical Use of Artificial Intelligence” for 4th semester B.Ed. trainees. The workshop aimed to promote responsible and meaningful use of AI in the field of education and was coordinated by Dr. Deborah Sangay Lepcha, Assistant Professor.



The program began with a welcome address by Sir Sanjay Biswakarma. The first session was conducted by Dr. Karma Hissey Lepcha from Sikkim Institute of Science and Technology (SIST), who explained the concept of AI and highlighted key ethical principles such as fairness, transparency, accountability, and privacy. The second session, delivered by Mr. Anmol Pandey, Assistant Professor of Computer Engineering at SIST, focused on how AI works and its integration in education.

A hands-on practical session introduced trainees to AI tool such as KIMI, ChatGPT, Gemini, and Note.ai, and demonstrated their use for academic tasks, including creating presentations. The workshop concluded with the facilitation of the resource persons by Principal Devi Kala Lama and a vote of thanks by Sir Sanjay Biswakarma.



ACHIEVEMENTS & RECOGNITIONS

7 SIST Civil Engineering Graduate Selected as Assistant Engineer

Sikkim Institute of Science and Technology (SIST) proudly announces that Er. Pema Gyaltchen Tamang, a graduate from the Civil Engineering Department, has been selected as Assistant Engineer (Civil) under the Kolkata Municipal Corporation through direct recruitment.



The institute congratulates him on this achievement and wishes him continued success in his professional career.

49	1305103	SUCHANDRA DAS	EWS	2000-07-17	F	EWS
50	1302208	RAHUL BERA	ST	2001-01-14	M	ST
51	1300918	TANUSHREE SINGH	ST	2000-09-20	F	ST
52	1304663	MANOJIT MANDAL	ST	1995-09-16	M	ST
53	1300659	SATYABRATA SINGH SARDAR	ST	1993-03-25	M	ST
54	1301720	PEMA GYALCHEN TAMANG	ST	2000-11-10	M	ST
55	1300056	SUMIT KUMAR CHAURASIA	GEN	1994-07-02	M	UR(PWD-H)
56	1301386	MUKESWAR HANSDA	ST	1996-09-19	M	ST
57	1301869	BIMAL MANDI	ST	1995-03-12	M	ST

8

SIST Secures ₹35 Lakh AICTE Research Grant for Advanced Nanomaterials Project

Sikkim Institute of Science and Technology (SIST), Chisopani, has achieved a significant academic milestone with the award of a prestigious research grant under the Research Promotion Scheme of the All India Council for Technical Education (AICTE).



Dr. Parita Basnet, Assistant Professor, Department of Chemistry, has been granted funding of ₹35 lakhs for her research project titled “Biosynthesized ZnO-Based Advanced Nanomaterials for the Photocatalytic Degradation of Pharmaceutical Contaminants, Including Antibiotics, Analgesics, and Antipyretics.”

The interdisciplinary project will also involve Dr. Karma Hissey Lepcha, Assistant Professor, Department of Civil Engineering, as Co-Investigator. The research aims to develop innovative nanomaterials for addressing environmental challenges related to pharmaceutical waste, contributing to sustainable and eco-friendly solutions.

This achievement reflects the institute’s growing research capabilities and commitment to scientific innovation under the leadership of Prof. (Dr.) B.B. Pradhan, Principal-cum-Director of SIST. The institute congratulates Dr. Basnet and Dr. Lepcha on this accomplishment and wishes them success in the successful execution and impactful outcomes of the project.

UPCOMING EVENTS

9

Workshop on Quality Concrete and Resilient Construction in Hilly Regions to be Held at SIST

Sikkim Institute of Science and Technology (SIST), Chisopani, in collaboration with BALKAPSO Construction, is organizing a three-day Workshop-cum-Refresher Course on “Quality Concrete, Resilient Construction & Retrofitting in Hilly Region” from 16 to 18 April 2026. The programme is being conducted under the convenorship of Prof. (Dr.) B. B. Pradhan, Principal-cum-Director of SIST, with Ms. Pemila Bhutia as Co-Convener, Dr. Perna Sharma as Organizing Secretary, and Mr. Pretam Dahal as Programme Coordinator.

The workshop will feature expert sessions by distinguished professionals from government departments and industry, including representatives from BALKAPSO Construction and the Government of Sikkim. The programme aims to enhance practical knowledge of modern construction practices suitable for hilly terrains through lectures, live demonstrations, and technical discussions.

Key topics include concrete mix design, seismic design requirements, bar bending schedule (BBS), quality control practices, and retrofitting techniques for structural resilience. The programme is intended for engineers, final-year students, and construction professionals, and participants will receive certificates upon successful completion.

About Us:
Sikkim Institute of Science and Technology
SIST is the only State Engineering Degree College of Sikkim located in Chisopani, South Sikkim. The institute is affiliated to Central University Sikkim popularly known as Sikkim University. The institute was established in 2018 under BUSA project, and it offers B.Tech in Civil Engineering and Computer Engineering. SIST is AICTE approved state government engineering college.

BALKAPSO Construction
Founded in 2017, BALKAPSO Construction is a structural engineering firm focused on delivering efficient solutions in design, analysis, modeling, and construction phase. The firm combines practical field experience with a strong technical foundation to address real-world engineering challenges. BALKAPSO through its engagement with professionals and academia, promotes a deeper understanding of structural safety and optimal engineering practices.

Department of Civil Engineering, Sikkim Institute of Science and Technology & BALKAPSO Construction

Chief Patron:
Sri. Sanjeev Varshni, IAS
Principal Secretary, Education Department, (Baram)

Sri. Ujjwal Rai
Director Higher and Technical Education
Programme Convener:
Prof. (Dr.) B. B. Pradhan,
Principal cum Director, SIST

Co-Convener:
Ms. Pemila Bhutia
(Organizing Secretary)
Dr. Perna Sharma
Programme Coordinator
Mr. Pretam Dahal

CONTACT AND REGISTRATION
Scan the QR Code for Registration

16th - 18th April 2026
Organized by
Department of Civil Engineering,
Sikkim Institute of Science and Technology
in collaboration with
BALKAPSO Construction

Certificates, Lunch and tea will be Provided to all the Participants.

Key Highlights
WORKSHOP FEATURES
Bridging Theory and Practice
Empowering engineers with practical skills for quality and resilient construction.

Expert Lectures
Sessions delivered by experienced academicians and industry experts.

Practical Demonstrations
Live demonstrations to illustrate important concepts such as concrete mix design, reinforcement detailing, and on-site quality control practices.

Technical Discussions & Case Studies
Interactive discussions based on real construction scenarios, focusing on challenges and solutions in hill construction and resilient infrastructure development.

DISTINGUISHED RESOURCE PANEL

Mr. Selman Sharma - CIVIL SCIENTIST
Structural Engineer specialising in Retrofitting and Seismic Designing

Mr. Vignesh Pradhani - CIVIL SCIENTIST
Structural Engineer, Education Department, Government of Sikkim

Director Head of Engineering & Education Department, Sikkim with 20 years of experience in the construction industry.

Mr. Ashok Chetri - SUPERSTRUCTURE ENGINEER
Structural Engineer, Designer and Field-Active Government Contractors of Sikkim

Supervising Engineer (SE), Electrical and Civil, Assistant Engineer, possessing strong experience in technical compliance, and guiding multidisciplinary teams for efficient delivery of infrastructure projects.

Ms. Dewa Zangmu Sherpa - ASSISTANT ENGINEER
Assistant Engineer in Roads and Bridges Department with Experience in Retrofitting and repairing DPR, Planning & Execution of Road Infrastructure.

MEET OUR SPONSORS
Our sponsors are the partners in this endeavor, whose support and contribution help us achieve excellence and ensure meaningful legacy.

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Link in bio available

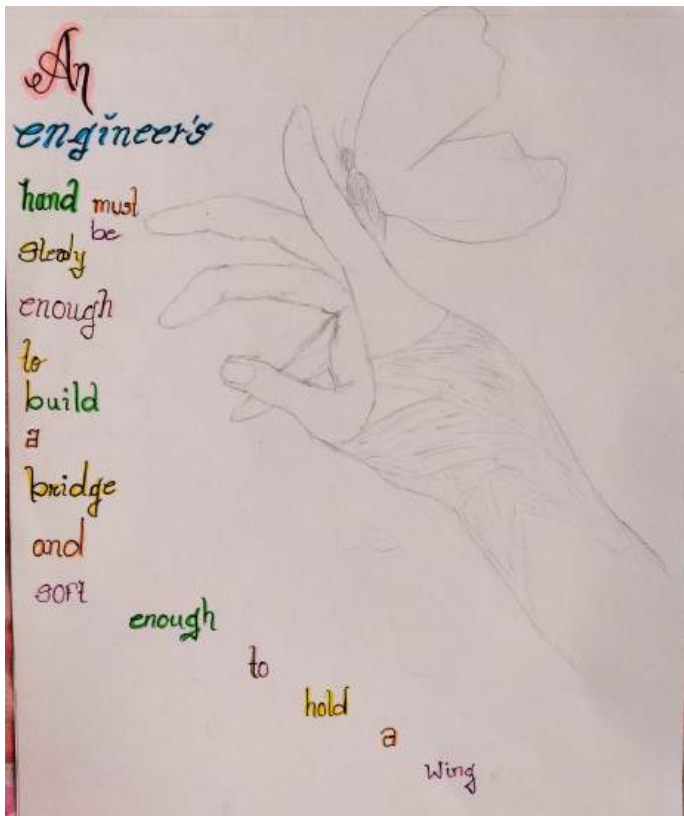
Topics Covered:

- Professional Responsibilities on site**
Engineers are responsible for ensuring safe, durable, and high-quality construction through proper technical knowledge, site supervision, and adherence to engineering standards.
- Concrete Mix Design**
Learn the fundamentals of designing concrete mixes for strength, durability, and optimal performance in construction.
- Seismic Design Requirements for Buildings in Sikkim**
Explore engineering techniques and solutions for safe and sustainable construction in hilly terrain.
- Bar Bending Schedule**
Gain insight into preparing and interpreting reinforcement schedules for accurate and efficient structural work.
- Quality Control on Site**
Discover essential inspection and testing practices to ensure construction quality and structural reliability.
- Retrofitting and Seismic Resilience Structures**
Learn modern methods of strengthening structures to improve safety and serviceability.

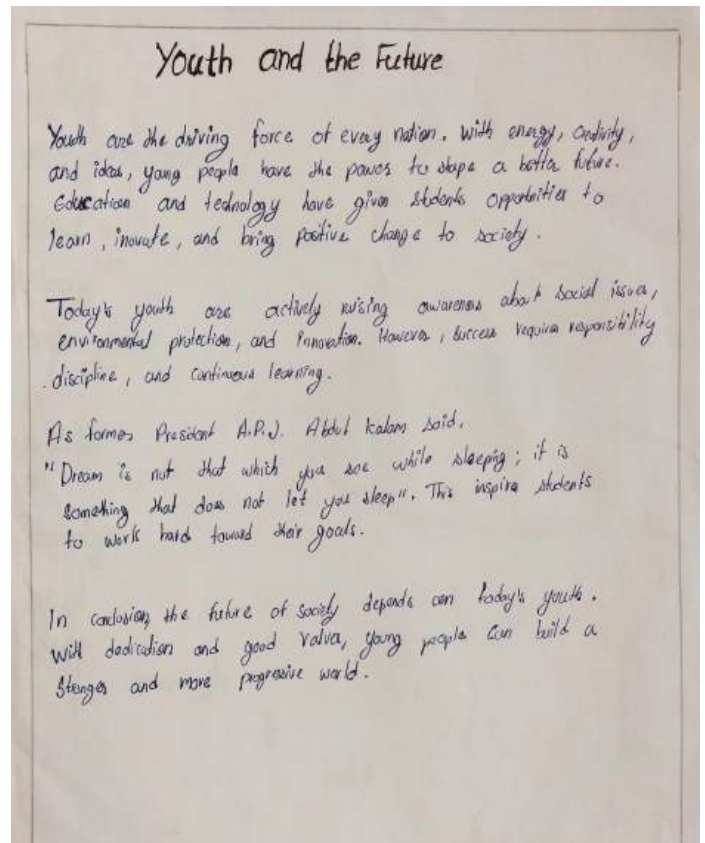
Target Audience:
Perfect for Assistant Engineers, Junior Engineers, final-year students, and construction enthusiasts, this program provides practical skills in Bar Bending Schedule (BBS), concrete Mix Design, seismic resilience, and retrofitting equipping you to handle real-world construction challenges in hilly regions like Sikkim.

"IF YOU CAN DREAM IT YOU CAN ACHIEVE IT "

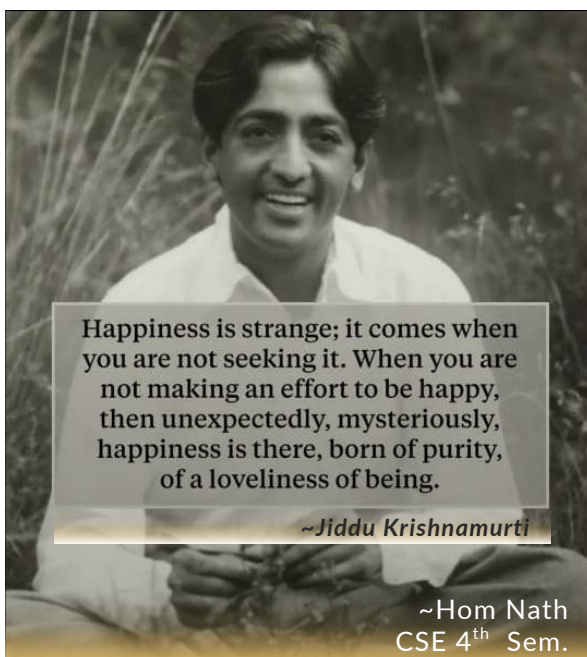
~Rajesh Bhattarai
CSE 4th Sem.



~Abhinav Rai
CSE 2nd Sem.



~Aman Kumar
CSE 2nd Sem.



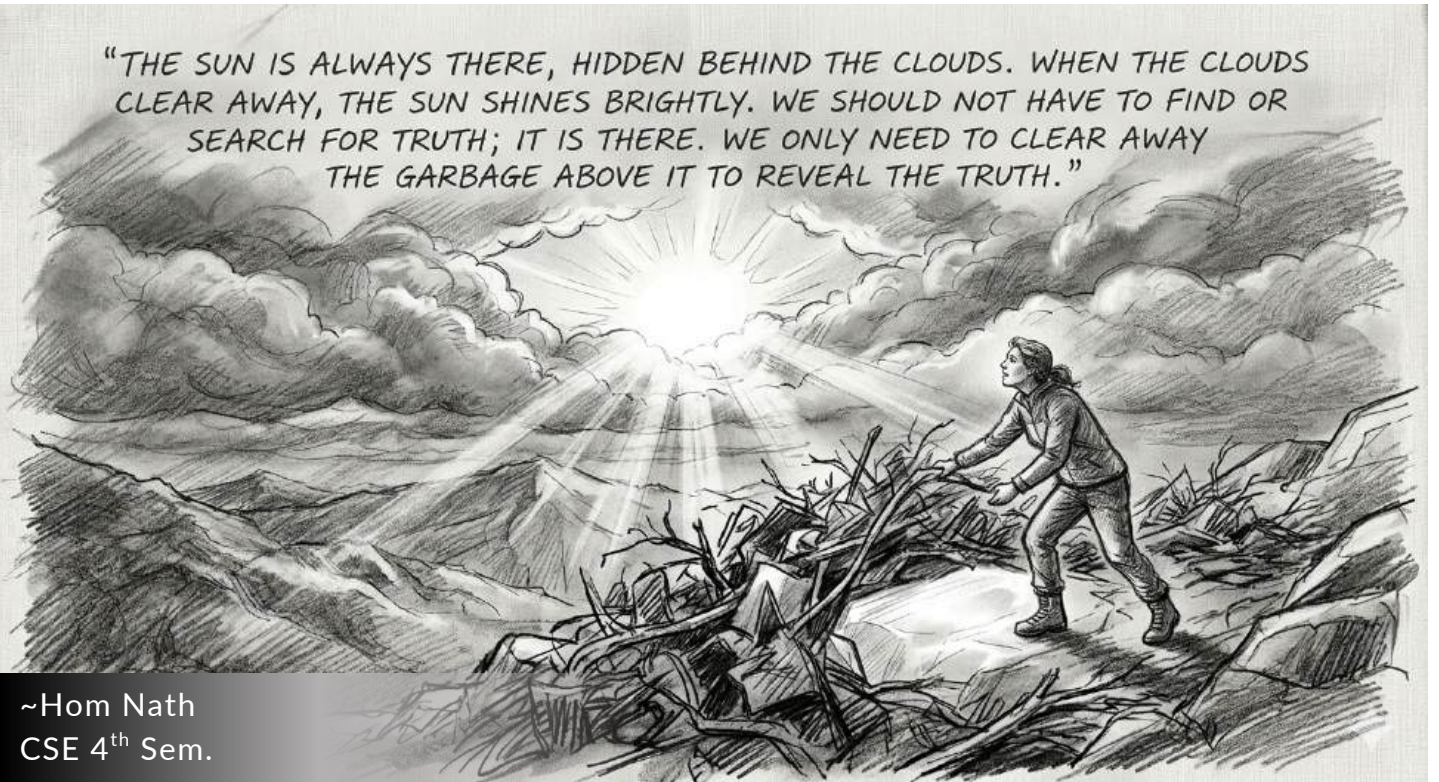
~Hom Nath
CSE 4th Sem.

“ Choose the right option,
make the right decision,
fight the right battle,
and now it doesn't matter
whether you win.

Victorious you already are.

~Hom Nath
CSE 4th Sem.

"THE SUN IS ALWAYS THERE, HIDDEN BEHIND THE CLOUDS. WHEN THE CLOUDS CLEAR AWAY, THE SUN SHINES BRIGHTLY. WE SHOULD NOT HAVE TO FIND OR SEARCH FOR TRUTH; IT IS THERE. WE ONLY NEED TO CLEAR AWAY THE GARBAGE ABOVE IT TO REVEAL THE TRUTH."



~Hom Nath
CSE 4th Sem.

"THERES NOTHING SUCH AS
FATE
IT'S YOURS OWN NATURE THAT MAKES
IT SO PREDICTABLE"

~Ishar Tamang
CSE 2nd Sem.

Ishar Tamang