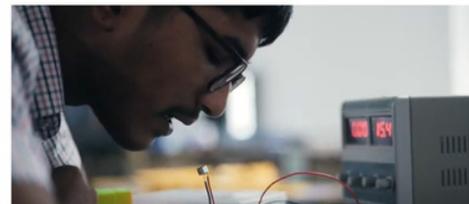


# STEM LAND NEWSLETTER



VOLUME-8, MAY 2022



## ABOUT STEM (SCIENCE TECHNOLOGY ENGINEERING MATHEMATICS) LAND

STEM Land is a rural tech center currently located in two outreach (Isai Ambalam and Udavi) schools in Auroville and supporting such centers in other locations in and around Auroville. Children and youth come to STEM Land for their Mathematics, EVS, and Science classes. They learn Mathematics, Electronics, 3D-Printing, Programming, Mindstorms (Robotics), strategic game puzzles, and much more.

The children take responsibility for their learning and plan their goals. They work individually, in pairs, or in peer groups and ask for support from facilitators when they need it. This self-directed learning is based on Sri Aurobindo's first True principle of education (Aurobindo, 1910); "Nothing can be taught". With younger children, we work on real-life projects that impact their surroundings. We believe a nurturing environment can support a child's learning. Its sister organization C3STREAM Land Designs offers youth an opportunity to learn, grow, work, and teach so that youth can volunteer in STEM Land and support themselves financially by working in technology. [Read more]

Recently AVI USA supported a short film to help people understand STEM Land. Please see the video and share it with others. [Click here]



## BECOMING AND BEING A SHIFU (A MASTER)

A one-year residential program for youth to Master – skills (Chip Design or Programming), competencies, and inner capacities.

### What this program wants to shift

- From theoretical, simplistic, and outdated education to up-to-date programs for mastering skills used in the industry (programming, VLSI design, desk research), competencies to use these skills to shift culture: including noticing patterns and systems, teamwork, powerful communication, problem-solving, and critical thinking, the inner capacity of understanding themselves (self-awareness) and taking responsibility for their life, courage to create dignity, and equity.
- From a low engagement and intensity program catering primarily to memory with some application to high intensity, immersive program that helps one take responsibility for their entire being – mind, body, heart, and soul.
- From mediocrity and an inability to engage in real-life challenges to excellence and having the courage to research and create solutions for real-life problems.
- From dependence on others to independence to interdependence with others.
- From being unaware of how one learns to taking responsibility for one's learning, learning innovative learning processes, and ability to create learning communities.
- From programs framed and executed by technology and leadership leaders with the latest learning methodologies only being available only for the privileged to be available to rural youth in India.

[Read more]



## SHIFU GRADUATION 2022 FEB 2ND

The first year of the Shifu program was completed successfully. We had a small graduation program for them. Shifu graduation ceremony was held on 2nd Feb 2022. During the celebration, the Shifuians shared their growth in the 1 year and so did their mentors. We invite you to look at the video of the same [Click here]. Auroville Today also covered the program with a full-page article [Click here]. Further, the last assignment for the Shifuinas (as they call themselves) was to write a synthesized research paper based on autoethnography. In the paper they reflected on their experience and based on it looked for possible components that would enrich the current education system. This paper has been accepted at epiSTEME9 as a full presentation and we look forward to their continued growth as part of C3STREAM Land Designs [link to paper],[ Read more]



## AUROVIDYA SEMINAR

In this workshop, we presented the exploration of inner capacities through leadership tools and how it has the potential for transforming reactions of fear into conscious responses based on the highest possibility in both teachers and students.

We will then engage with some technical aspects of developing the mental being through technology while holding these values and interacting in the kind of environment we would like to create for children with an introduction to some of the hands-on work we do.

By the end of the workshop, we hold that we would have conveyed how at C3SL we develop the values of responsibility, equality, and the courage to create in children and you can take back some reflections on how you will do this with the children.

We presented in the mental domain.

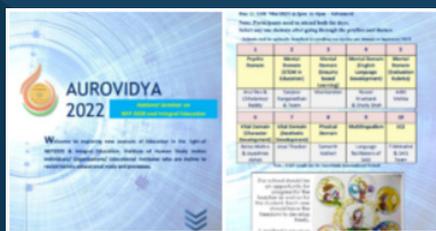
Plan for the workshop:

### Day 1:

- Introduction to STEM land
- Stewardship – Knowing who I am?
- Stand (Universal value) and Fear (socialized).
- Knowing who I am is a possibility
- Seven segment display

### Day 2:

- Deep listening and conscious full-spectrum response (CFSR)
- Programming Scratch projects [Read more]



## TEN-DAY VIPASSANA MEDITATION IN STEM LAND AUROVILLE

Vipassana, which means to see things as they are, is one of India's most ancient techniques of meditation. It was taught in India more than 2500 years ago as a universal remedy for universal ills, i.e., an Art of Living.

The technique of Vipassana Meditation is taught at ten-day residential courses during which participants learn the basics of the method, and practice sufficiently to experience its beneficial results. There are no charges for the courses – not even to cover the cost of food and accommodation. All expenses are met by donations from people who, having completed a course and experienced the benefits of Vipassana, wish to allow others to also benefit.

Vipassana is one of India's most ancient meditation techniques. Long lost to humanity, it was rediscovered by Gautama the Buddha more than 2500 years ago. The word Vipassana means seeing things as they are. It is the process of self-purification by self-observation. One begins by observing the natural breath to concentrate the mind.

With a sharpened awareness, one proceeds to observe the changing nature of body and mind and experiences the universal truths of impermanence, suffering, and egolessness. This truth-realization by direct experience is the process of purification.

The entire path (Dhamma) is a universal remedy for universal problems and has nothing to do with any organized religion or sectarianism. For this reason, it can be freely practiced by everyone, at any time, in any place, without conflict due to race, community, or religion, and will prove equally beneficial to one and all. [Read more]



## MACHINE LEARNING COURSE

C3STREAMLand conducted a course on Machine Learning for learners. The course was divided into six 2-hours sessions. The motive behind the course was to make learners familiar with the most widely used machine learning concepts and algorithms, being adopted rapidly by many tech companies.

The course was offered by Alex, Sanjeev, and Ganesh, as a part of sharing our learning with the machine learning enthusiasts. Sanjeev and I (Ganesh) did the course on Coursera offered by Stanford University and taught by Andrew Ng, the co-founder of Coursera and Google Brain. Alexander Sokolov (Alex) converted the assignments from Octave to Python to make them accessible to everyone.

The course provided a broad introduction to machine learning, data mining, and statistical pattern recognition. Main topics include:

- Supervised learning (parametric/non-parametric algorithms, support vector machines, kernels, neural networks).
- Unsupervised learning (clustering, dimensionality reduction, recommender systems, deep learning).
- Best practices in machine learning (bias/variance theory; innovation process in machine learning and AI). [Read more]

## DATA STRUCTURE AND ALGORITHM COURSE

One of the former youths of STEM land who is now a project lead at Accenture offered an advanced course on data structures and algorithms. This course now forms a basis of an algorithms course we are planning as part of a BVOC program we are working on with AIAT and PU.

## SHIFU STUDENTS VISIT SAVITRI BHAVAN

Being and Becoming Shifu program provides opportunities for students to explore and integrate with Auroville. As part of it we visited Savitri Bhavan last Friday and Dhanalakshmi shared about Sri Aurobindo and Mother and also about Savitri Bhavan and the art gallery. [Read more]



## GUEST TALKS ABOUT THE FEMINIST APPROACH TO TECHNOLOGY

FAT:

Feminist Approach To Technology (FAT), FAT is organizing a STEM Talk series webinar from January to March 2021, “STEM और हम, स्टेमपरलड़कियों द्वारा चर्चा ” where women will share their journey, achievements, and challenges in the STEM domain. They will discuss how they were able to break gender barriers and fulfill their dreams.

Through these monthly talks, we are aiming that more girls get inspiration from this talk and advocate STEM education for young girls and women so that they can start thinking about education/career in STEM from an early age.

STEM land in a rural place will allow the girls children, youth, and even adults to learn about science, technology, engineering, and mathematics. [Read more]

See Translation

**STEM और हम**  
STEM पर लड़कियों द्वारा चर्चा

**FAT**  
Feminist Approach to Technology

**अतिथि वक्ता**  
**सरन्या**  
STEM Land  
इलेक्ट्रॉनिक्स इंजीनियर, शिक्षक  
और शोधकर्ता

**मॉडरेटर**  
**ललिता**  
गर्ल्स इन स्टेम प्रोग्राम  
FAT (फेमिनिस्ट एप्रोच टू  
टेक्नोलॉजी)

**हमसे जुड़े**

## WEBINARS ON TECHNOLOGY FOR WELL-BEING ORGANIZED WITH RTL WORKS



**RTL-TECH**  
Presents  
**LIVE WEBINAR SERIES 2022**  
**Technology for Equity and Well-Being through Self-Awareness and Action**

Topics: Fake News, Social Media, Gaming, Measuring Impact in Technology, Artificial Intelligence, Open Source Tech and Software  
9th & 23rd March, 7.30 pm to 9.00 pm Indian Standard Time

**Dr. Monica Sharma**  
Author of award-winning book  
"Radical Transformational Leadership: Strategic Action for Change Agents"

**Dr. Sanjeev Ranganathan**  
Founder C3Stream Land Design & STEM Educator

**REGISTRATION:**  
No Fee, click here to register

**Webinar I, 9th March, 7:30 PM TO 9 PM India Standard Time**  
Topics: Fake News, Social Media, Gaming

**Temusenia Jamir**  
Social Work Professional, District Project Assistant, Nagaland Education Project-Project Lighthouse & Project NECTAR

**Arun Iyyanarappan**  
IT professional & STEM Educator

**Daljeet Wadhwa**  
Media Educator Professional, Founder and Director, Sri Aurobindo Centre of Arts and Communication

**Ranjith Perumal**  
Engineer IT Manager and VLSI Layout

**Poovizhi Patchaiyappan**  
Engineer and IT Manager Software

**Webinar II, 23rd March, 7:30 PM TO 9 PM India Standard Time**  
Topics: Measuring Impact in Technology, Artificial Intelligence, Open Source Tech and Software

**Arya Siddarth**  
ICT & Development - RTL Practitioner Coach

**Dr. Sanjeev Ranganathan**  
Founder C3Stream Land Design & STEM Educator

**Dr. Sudarshan Rodriguez**  
Development Professional, Founder and CEO, RTL-Works

**CONTACT:**  
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The circumference of the circle is equal to the length of its boundary. This means that the perimeter of a circle is equal to its circumference. The length of the rope that wraps around the circle's boundary perfectly will be equal to its circumference. [Read more]



A live Webinar series on technology for equity and well-being through self-awareness and action was organized with RTL works on the 9th and 27th of March. The topics covered in the seminar include fake news, social media, gaming, measuring impact in technology, Artificial intelligence, open-source Tech, and software. The seminar was chaired by Dr. Monica Sharma, Dr. Sanjeev Ranganathan, and Dr. Sudarshan Rodriguez.

### RAJJU GANIT AND HOW WE ARE SURPRISED TO LEARN ABOUT ANCIENT MATHEMATICS

Rajju ganit (string geometry, chord geometry) aims to teach practical geometry more understandably.

The useful new things students would learn as part of string geometry or Rajju Ganit are

- Conceptual clarity.
- Measurement of angles
- Simplified geometry
- Measurement of the circle
- The theory of approximation.
- Trigonometry.
- Applications to real life.

As a part of the learning session through Rajju Ganit, Children used a rope to draw a circle, measure the circumference of the circle, and find the value of Pi.



### TRIP TO AUROVILLE INSTITUTE OF APPLIED TECHNOLOGY (AIAT)

On 13th May 2022, our C3Streamland team visited AIAT as a part of the BVOC program. The team was led by Dr. Sanjeev Ranganathan. AIAT is situated in Thricurtamburam, Koot Road.

AIAT, a non-profit Industrial Training Centre, aims to create prosperity in rural areas through vocational education and self-empowerment.

AIAT was established in 2004 with the support of the German Government and the non-profit organization VFAVR (Association for Development of the Region around Auroville).

AIAT focuses on technical education as a holistic approach based on learning by doing, enabling youth to become independent thinkers and to be able to provide solutions.

AIAT's two campuses have a favourable ambience for learning, experimenting, and creative activities. The Irumbai campus focuses on segments of Computer Science, Electronic and Electric, and Civil; at the Palmyra campus, the focus of training is more on manufacturing and production.

The visit gave us exposure to the newly constructed Electronics lab, Electrical lab, and ICTSmartroom. The facilitators guided the team and gave a demonstration about every lab present. [Read more]



**Contributions towards STEM land can be directed towards Auroville Unity Fund**

with a note for STEM land and mail it to

Dr. Sanjeev Ranganathan,  
STEM land Udavi School, Auroville,  
Edayanchavadi, Tamil Nadu - 605101  
All donations are 100% tax-deductible in India.  
[www.C3streamland.com](http://www.C3streamland.com)

