

KLETech - SRIB Collaborative Initiatives

The initiative for collaboration with Samsung Research Institute Bangalore (SRIB) was taken under the KLE Technological University's (KLE Tech) Industry Collaborative Initiatives towards curriculum design & delivery, collaborative projects for experiential learning, and capacity building of students & faculty.

The objective of this collaboration is to strengthen the curriculum thread in undergraduate programs by involving the experts from SRIB in Board of Studies (BoS) and Introduction of state of art courses for UG and PG programs, where the industry experts are a part of designing course content, delivery, and evaluation. SRIB team is also actively involved in course conduction through co-delivery and conducting reviews towards evaluation. The SRIB team is in continuous discussions with faculty to arrive at the holistic curriculum thread.

The SRIB team contributes towards capacity building of students by conducting training programs, workshops, expert tech talks. Towards enhancing software competency SRIB team contributes in conducting Codethons and Hackathons. SRIB also provides student internships to students of KLE Tech under the initiative. Under the initiative SRIB also plays a role in capacity building of faculties by conducting faculty development programs (FDP), workshops, training programs, and also provide internships to faculties.

Under the initiative collaborative projects with faculties and includes activities like writing proposals to funding agencies, industry sponsored projects, institutional sponsored projects towards developing a POC, joint IP generation and publications. These activities paves ways towards experiential learning for students through collaborative projects evolving them to think beyond academia, and providing exposure to industry culture.

Curriculum Design

Embedded Intelligent Computing

- Faculty Capability building:
- 12 Faculty are trained for one week on embedded intelligent computing at SRIB 22nd to 29th July 2019.
- Workshops for 1-2 days on advanced topics
 - Android programming for efficiency
 - Heterogeneous computing

Projects

- Research projects given by SRIB to students and faculty in the area of embedded intelligence computing and reviewed by SRIB experts.

Course Design

- A course 'Embedded Intelligent Computing' is designed and to be offered in the ensuing semester (Floated from Jan 2019)

Content
1. Basics of embedded systems
2. Lab session on embedded systems
3. Heterogeneous computing
4. Heterogeneous computing Lab session
5. ML Frameworks
6. ML Frameworks lab with the target device
7. Model Development and Optimization
8. Android Anatomy

Research Collaborations

Projects

Year	Number of Projects	Number of Students	Number of Faculty
2019-20	27	102	21

List of Faculty from KLETech part of Collaboration

#	Name of the Faculty	School/ Department
1	Uma Mudenagudi	Dean R&D
2	Meena S M	HoS School of CSE
3	Nalini C Iyer	HoS School of ECE
4	A B Raju	HoD EEE
5	Sunitha Hiremath	School of CSE
6	Shrinivas Desai	School of CSE
7	Nirmala S R	School of ECE
8	Uday Kulkarni	School of CSE
9	Ramesh Ashok Tabib	School of ECE
10	Sunil V G	School of CSE
11	Priyadarshini Patil	School of CSE
12	Praveenraj Pattar	School of CSE
13	Mallikarjun Akki	School of CSE
14	Shashidhara V	School of CSE
15	Shivashankar H	School of ECE
16	Shrishail M P	School of ECE
17	Heera Wali	School of ECE
18	Satish C	School of ECE
19	Leah S Joshi	Department of EEE
20	Shilpa Kamath	Department of EEE
21	Kavita Chachadi	Department of EEE
22	Ravi Guttal	CIPD
23	Sacin Khot	School of ME

Projects: ODD Semester AY 2019-20

# of Projects	Projects	KLETech SPOC	# of Students
7	Embedded Vision Projects	Ramesh Tabib	26
4	Embedded Ondevice Projects	Uday Kulkarni	15
8	HME Projects	Nirmala S R	35
19		Total Number of Students	76

#	Project Title	Samsung Mentors	KLETech Mentors	Vision/ Ondevice/ HME	# of Students
1	Real Time Hand Gesture Recognition For Mobile Devices	Venkat Ramana P	Kavita Chachadi	Embedded Vision	4
2	Thin Object Segmentation Using Image Matting	Amit Kumar	Shilpa Kamath	Embedded Vision	4
3	Scene graph generation with objects	Sandeep Palakal	Leah S Joshi	Embedded Vision	4
4	Video Super resolution	Raj Narayan Gadde	Sunil V G	Embedded Vision	3
5	Multi Object Tracking for 360 videos	Basavaraja	Priyadarshini Patil	Embedded Vision	4
6	Emotion Recognition in the wild	Sandeep Palakal	Satish C	Embedded Vision	4
7	Real-time Semantic Segmentation of Video	Sujoy	Shrishail M P	Embedded Vision	3
8	TRIE Data structure	Vanaraj	Meena S M	Embedded On-device	3
9	ARM NN SDK for X86 Windows platform	Sharan Allur	Uday Kulkarni	Embedded On-device	4
10	Encryption and Decryption for NN Models	Shrikant M	Nalini C Iyer, Heera Wali	Embedded On-device	4
11	On Device AI model Compression	Sharan Allur	Uday Kulkarni	Embedded On-device	4
12	Enterprise Image Retrieval	Srinivas Kudavelly	Praveen Pattar, Mallikarjun Akki, Shashidhar	HME	7
13	Paediatric Bone age analysis using DR Images	Deepak Shekhar, Shantanu	Shrinivas Desai, Nirmala S R	HME	3

14	Simulation of Virtual Diabetic Patient	Srinivas Kudavelly	Sunitha Hiremath, Shrinivas Desai	HME	4
15	Android App for CGM	Srinivas Kudavelly	Mallikarjun Akki	HME	4
16	Given a reference board (3rd party) create a prototype for insulin pump functionality	Srinivas Kudavelly	Shivashankar H	HME	3
17	Simulation of Fluid dynamics- Injection, Circulation of Liquid similar in property of Glucose	Srinivas Kudavelly	Ravi Guttal, Sacin Khot	HME	4
18	3D Mockup of the CGM System	Srinivas Kudavelly	Ravi Guttal, Sacin Khot	HME	4
19	System level analysis of CGM	Srinivas Kudavelly	Ravi Guttal, Sacin Khot	HME	6

Projects: Even Semester AY 2019-20

# of Projects	Projects	KLETech SPOC	# of Students
3	Embedded Vision Projects	Ramesh Tabib	12
1	Embedded Ondevice Projects	Uday Kulkarni	03
4	HME Projects	Nirmala S R	11
8		Total Number of Students	26

Project	Project Title	KLETech Mentor	Samsung Mentors
1	AI Based Hand Gesture Recognition - Hands in Action	Shilpa Kamat	Sandeep Jana
		Kavita Chachadi	Rajas Joshi
2	Low Complex AI Video Super Resolution (AI-VSR)	Meena S M	Sirish Kumar
		Sunil G	
3	On-Device AI based Streaming Framework	Meena S M	Rajaram Naganur
			Prasenjit Chakraborty
4	Depth Densification by Estimating Depth from RGB & Sparse Sensing	Uma Mudenagudi	Basavaraja S Vandrotti
		Ramesh Ashok Tabib	Ankit Dhiman
5	Enterprise Image Retrieval	Praveenraj Pattar	Suresh Lohith
6	Paediatric Bone age analysis using DR Images	Shrinivas Desai	Shantanu Majumdar
		Nirmala S R	Deepak Shekhar
7	Android App for CGM	Mallikarjun Akki	Srinivas Kudavelly
8	3D Graphics - Procedural Mesh Generation	Uma Mudenagudi	Dr.Lakshmi
		Ramesh Ashok Tabib	