

IC-COE Board of Observers Review Apr-May 2024

Manual Notes:

Hello everyone,

Thank you for joining the two sessions in May for the first round of review by the Board of Observers for the IC-COE program.

Attached, please find an AI generated minutes of the meeting. It is not in the nest format. Hence, I am mentioning the key points here:

1. Synopsys Digital VLSI Lab has been running since Aug 2023; several students have been trained. Student-led training (internal) has been conducted.

- Two SNUG student papers have been accepted.

2. One of the key obligations for the Synopsys engagement is for JU to become a nodal training hub in Eastern India.

- Multiple challenges to launch this initiative.
 - Software license not purchased yet due to JU administrative delays. With the appointment of a new VC, the process is now moving, although at a slow pace. Without a purchased license, external paid training cannot be initiated.
 - Faculties are required to conduct the external training and cannot be student run only. Not enough faculties are trained through the FDP program yet. Need a solution from JU on this.
 - Courses need to be designed with more emphasis on hands-on training. Mrinal and Amit from Synopsys will help JU to build these modules.

3. Purchase of software, computers, GPUs, Embedded system boards Delays.

- Significant delays observed in the process. GJUAF has categorically raised the concern with JU FO, pro-VC team and have been assured that this will move swiftly from here.
- Tender process, procurement process will unfortunately need grass root follow up from the faculties. While not the most efficient, it was agreed that the JU faculty team will follow up on a regular basis to complete this process.
- Failing to acquire this infrastructure is causing almost a year (one batch of students) to miss out on availing these benefits.
- Need to look beyond JU IT department, employing few faculties and some motivated students to fix the software license installation issues.

4. Overall progress with student trainings, internships, projects, hire:

- Few good progresses have been made with focused training, internship opportunities and hiring that have happened through the MoU partners or network.
- Few good student activities including launching, training and development of student clubs, cross department hands on learning have happened.
- Few good opportunities opened for students' experiences to attend VLSI conferences, submit papers etc.
- Important follow ups required with the following partners to launch their projects:
 - HCL (Biswadeep): Pending student selection, pending project launch. Follow up required.
 - GlobalFoundries (Shubhankar): Launch of the two projects discussed with GF. Follow up required.
 - IMEC (Shubhankar & Santanu): Need a round of follow up to launch the projects and execute the MoU. Arindam Mullick had not been responding off late. Shubhankar to follow up with him at DAC in June 2024.
- RISC-V Project:
 - Students need a follow up discussion to understand and break down the initial SoW into project plans for 4 sub-groups.
 - Shubhankar will convene a call with Sayan and the student teams.
- Smart Agriculture:
 - Little to no practical progress noticed in the hardware design to gather experimental data.
 - Kishalay from the Observer team is willing to guide identified students but strongly needs to identify a motivated lead on the project at JU. It may be a faculty, or it may be a senior student.

Thank you
Shubhankar

Meeting summary for JU IC-COE Board of Observers Review Meeting April 2024 (05/09/2024)

Quick recap

Shub and Sayan discussed the status of a funding proposal for acquiring equipment like computers, workstations, and Synopsis software, highlighting delays due to policy changes and procurement bottlenecks. They addressed utilizing existing licenses, installing new systems, and the need for expertise in software deployment along with training plans. Discussions also covered equipment order status, becoming certified trainers, and a potential joint training program.

Next steps

- Shub will set up a follow-up call with the team to discuss the remaining items not covered in the meeting.
 - Sayan will share the Excel sheet with Shub, who will then distribute it to the entire team.
-

Summary

Global Alumni JU Funding Utilization Delays

Shub and Sayan discussed the status of a funding and purchasing proposal from the global alumni JU for the acquisition of specific equipment and software, including 19 computers, a workstation, and Synopsis software. Sayan explained the initial purchase was put on hold due to October's funding, and further delays occurred in obtaining approval to use alumni funds for the purchase. However, with the appointment of a new Vice Chancellor, the proposal was revived and approved, only to face further hurdles due to recent changes in the government's purchase rules. The new rules require all JU tenders, including departmental ones, to be handled by two specific individuals, causing a bottleneck in the purchase process.

Improving Software Licensing Process for Academia

Sayan and Shub identified the slow and inefficient process of procuring software licenses through the university's system as a significant impediment to the academic program. Shub underscored the need for a clear roadmap and timeline to complete the process, highlighting the impact of delays on the program and student progress. Sayan proposed asking donors to send in kind instead of cash to circumvent the lengthy procurement process, but this idea was dismissed by Mrinal as not feasible. Shub stressed the urgency of the situation and called for strong conversation and accountability checks, suggesting the engagement of various stakeholders, including the VC, Pro-VC Amitabha to find substantive solutions.

CDAC Licenses and Training Program Discussion

Shub and Sayan discussed the utilization of CDAC licenses and training programs. They confirmed that the licenses received were free of cost and already installed. Shub suggested starting the training program with these licenses while waiting for the purchase of additional ones. Mrinal clarified that paid training with donated licenses from Synopsys was not allowed. As a solution, Shub proposed that faculty and students be trained on the tools first. Shub also planned to follow up with the Pro VC at JU University to understand their timeline. Lastly, Sayan raised a question about connecting the existing 15 machines with the CDAC server for training, which Chintan (CSE) agreed to look into.

Machine Configurations and Software Licensing

Sayan, Shub, Biswadeep, and Chintan discussed issues related to machine configurations and software licensing in their lab. They clarified that the seven machines in the IC Centre could be connected to the CDAC server and the Workserver

simultaneously. They also resolved a misunderstanding about the Synopsys software, agreeing that it was for infrastructure and not training. Two action items were identified: interim use of CDAC licenses for Synopsys AMS lab training, and installation of 19 new computers in the analog mix signal lab. Joydeep confirmed that he and Shub were following up on these items. A major issue was the need for Linux installation and partitioning for the newly purchased computers, which the university's IT department was not yet prepared to handle.

Addressing Software Installation Challenges and Solutions

Chintan, Shub, Sayan, Joydeep, and Kishalay discussed the challenges and solutions related to the installation of specific software and systems. Chintan raised concerns about the lack of experience and help regarding the installation process. Shub suggested seeking help from vendors and other departments, while Kishalay emphasized the necessity of in-house expertise and self-driven individuals. The team acknowledged the need for solutions despite the identified problems. Kishalay clarified the requirements for networking 19 computers and running jobs, and emphasized the necessity of LSF infrastructure and the expertise that cannot be gained from watching YouTube videos. Kishalay also clarified that Cadence, as a tool bank, does not provide the necessary help, suggesting a direct approach to the tool developers would be necessary.

Voluntary Support, Infrastructure, and Training

Biswadeep proposed asking Anil from HCL to provide voluntary support, which was agreed to be a one-time occurrence. The team discussed the need for infrastructure setup and the frustration of the situation, emphasizing the necessity of moving forward. Shub suggested that the training program could potentially fund the recruitment of two heads for the project. Kishalay proposed consulting a networking expert on a temporary basis if necessary. Shub agreed to this and mentioned the possibility of getting assistance from Utah Tech Labs (a partner of the IC-COE). The team also discussed the progress of various software projects.

Equipment Orders and Training Update

Sheli reported on the status of equipment orders for Embedded Labs placed before March 31st, which were delayed due to staff shortages in the purchase section. The orders, including Nanoboards and 2 GPUs, were expected to be delivered by the end of next week, with the completion of the selection process. Sheli also mentioned a fresh order for Xilinx Boards, expected to be delivered within a week. In the discussion on training, Sayan mentioned that students and some faculties were attending training programs from Synopsys and other platforms, but there was no clear metric for measuring the effectiveness of the training. Shub emphasized the importance of practical training and raised the question of whether there were any certifications awarded for the training. Amit clarified that he had not seen any certifications but noted that many trainings were being conducted.

Certified Trainers and Synopsys IC-COE Program

The team discussed the process of becoming certified trainers and the integration of third-party training content. They emphasized the importance of training the trainers and getting certification to fulfill obligations to Synopsys but raised concerns about the readiness of individuals to become certified trainers and potential legal issues. The team also discussed the launch of the Synopsys IC-COE Program and the necessity of faculty-led training for external training, while also agreeing to avoid using Synopsys' name in external training to avoid potential complications.

Joint Program Discussion and Follow-Up

A potential joint program involving IIT Jomu, North Eastern states, and training 40-50 students and faculty for an FDP program was discussed. Shub proposed further discussions on legalities, readiness, and branding with Mrinal, Amit, and others. The conversation ended prematurely, but plans were made to continue discussions in a follow-up meeting next week. Shub and Kishalay agreed to conduct this session, with Shub committed to setting up a follow-up call and sending out invites. Sayan offered to share an Excel sheet with the team on the remaining topics before the next meeting.

Meeting summary for JU IC-COE Board of Observers Review Meeting April 2024 (05/30/2024)

Quick recap

The team discussed the progress of their projects, with a focus on the need for faculty involvement, student engagement, and clear project management. They also addressed challenges in hardware-related projects and the importance of a proper framework and experimental design for their IoT project. Lastly, they reviewed ongoing projects and potential collaborations, emphasizing the need for active involvement and clarity in research and project management.

Next steps

- Sayan will finalize the training program and identify qualified faculty members to conduct the courses, ensuring they are prepared and ready to start offering training sessions.
- Shub and Sayan will ensure the necessary logistical arrangements, including the purchase of additional computers and software, are in place to facilitate the training program.
- Shub will follow up with Sayan to get clarity on the status of the RISC-V project, timeline for execution, project scopes, and student selection.
- Shub will send an email to the group, including Sayan, Santanu, and himself, to follow up on the collaborations with HCL, IMEC, and Global Foundries.

- Sayan and Shelli will convene a meeting with the identified faculty members to get a clear understanding of their interest and commitment to the Smart Agriculture project, and propose a solution to address the lack of progress on the hardware and data collection aspects.

Summary

Project Progress and Free Online Training

Shub and Sayan discussed the progress of their project. Sayan informed that the synopsis purchase order will be released soon and two students' papers are ready for SNUG participation. Sayan also proposed a free online training program due to the lack of purchased machines. Shub confirmed that they have the necessary infrastructure for the digital training program. However, they cannot offer any paid courses. The team agreed that once the synopsis software is purchased, they can technically use any license for the training. The next step is to complete the software purchasing process.

University Training Course Planning and Implementation

Shub, Sayan, Amit, and Kishalay discussed the planning and implementation of training courses at the university. Sayan confirmed the initiation of the process, while Amit raised concerns about the faculty's qualifications and the course curriculum. Shub emphasized the necessity of preparedness and identified the need for suitable faculty. The group agreed on the need for action, specifically regarding faculty identification, and discussed the progress of the course syllabus for the master's degree. There were also discussions about the potential of paying faculty for their efforts and the future opportunities this could present. Kishalay's concerns about faculty learning new toolsets were not addressed.

Faculty Alignment with IC-COE's Activity

Shub, Kishalay, Sayan, Sheli, and others discussed the alignment of faculty with IC-COE's overall activity. Shub emphasized that the benefits of the initiative extend beyond training and toolsets and into faculty's career trajectories, student graduations, and publication prospects. Kishalay raised the need for faculty to understand the career benefits of participating in the program. Shub also stressed the importance of faculty involvement and suggested that Sayan and Sheli convene a meeting with faculty from different departments to discuss their perspectives and interests. Sayan agreed to organize this meeting.

Faculty Involvement, Student Feedback, and IoT Updates

The team discussed the importance of faculty involvement and student feedback. Kishalay and Sayan agreed on the need for increased clarity and holding faculty accountable for their actions. The team also highlighted the importance of taking advantage of opportunities from partners and focusing on the Smart Agriculture. Sheli provided updates on procuring items, including two GPU boards and Raspberry Pi boards

for an IoT course, and encouraged students to develop useful products for the industry. Shub expressed interest in understanding more about the hardware side of the project.

IoT Project Progress and Challenges

Shub, Sheli, and Kishalay discussed the progress and challenges of their IoT project, specifically focusing on the hardware aspect of data gathering. Shub expressed concerns about the current status of data collection and the need for a proper framework and experimental design. Kishalay questioned the infrastructure and project scope, emphasizing that a significant part of the project, 90%, is in hardware, not just data processing. The team concluded that without appropriate data gathering and setup, their project goals may not be achievable.

Addressing Student Engagement in Hardware Projects

Shub, Kishalay, and Sheli discussed the challenges they were facing with student engagement and progress in hardware-related projects. Kishalay highlighted that students were shirking away from these projects, often considering them as hobbies rather than academic pursuits. Shub emphasized the need for a clear path forward, potentially involving external help or faculty guidance. Sheli suggested reaching out to partner companies for hands-on training and proposed focusing on a specific project to help students gain practical experience. The team also discussed the need to identify and involve faculty with appropriate expertise in hardware and IoT.

Improving Research and Project Management

Kishalay, Sayan, and Shub discussed the challenges in research and project management, with a particular focus on the need for active involvement and clarity. They agreed on the importance of a team following up on tasks and maintaining regular meetings for progress tracking. The group also expressed frustration with vague statements and the need for projects to be defined with clear steps, timelines, and resource requirements. Shub decided to follow up on a particular matter, while Sayan mentioned an interesting email about a potential collaboration with GlobalFoundries in Singapore coming from HCL.

GlobalFoundries Project and RISC-V Collaboration

Shub and Sayan reviewed various ongoing projects including the GlobalFoundries and other projects, with plans for increased communication involving Sayan, and other faculties. They also discussed the integration of a new student intern in the Global Foundries project and the formation of a new project team. A significant portion of the discussion revolved around the decision to use the old instruction set architecture (ISA) in the RISC-V project due to a lack of competency in a new one, as well as the use of optimization techniques for power performance and area in a heavy data processing application. Finally, they considered potential collaboration on the RISC-V project and committed to further discussion on the matter.