

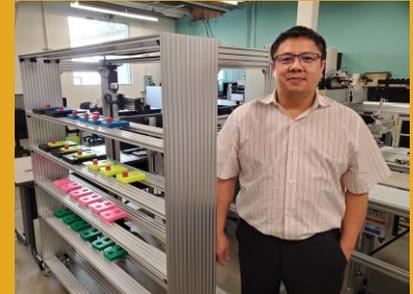


Spring 2021

Update on the Computer Integrated Manufacturing (CIM) Lab Upgrades

Nearly three years ago, the ISE Department embarked on a project to revamp and upgrade the Computer Integrated Manufacturing Lab in Room 194. The goals of the project were to revamp the equipment, software infrastructure, and layout of the room to enhance its reliability, appearance, and effectiveness for teaching and research. Mr. Tom Pham, an SJSU BSISE who returned after many years in industry, proposed and, over the course of the last year and a half, implemented the plans. Tom was able to accomplish much of this work on a part-time basis during the pandemic, while also fulfilling his role at a local software company. Concurrently, he began handling the lectures of ISE 115, the core ISE Lean Integrated Manufacturing course, which uses the CIM lab each week to teach ISE students about current manufacturing systems concepts.

Today, we see the initial objectives of this upgrading project nearing completion. A list of some of the new elements that are now in place and operational is presented below:



Mr. Tom Pham, CIM Lab Specialist with ASRS he designed and built.

1. Convert conveyor operations, robot systems and inspection station to **wireless communications and control**, arranged for **better security, safety, and reliability** of lab operations.
2. Design, development, testing and installation of a new **Data Base Management System** for robot and conveyor operations and control (Communications Workstations).
3. Acquisition and installation of an **Omron Hornet robot and SmartVision system**, a state-of-the-art suspended robotic device that enables items to be gripped moved and released at high speed.
4. Acquisition of an **Omron LD series mobile robot**, received as a part of an Omron grant to the ISE department.
5. Design, build and install an **Automated Storage and Retrieval System (ASRS)**. The purpose of this unique robotic system is to enable the loading and unloading of pallets from the conveyor.
6. Installation of **4 new 3D printers** that have been used to create parts for the conveyor system and robot stations as needed. Like other elements of the lab, these printers are also included in the lab's teaching program.
7. Acquisition of a **CNC router and CNC lathe** as gifts from the College's Engineering Shops to increase opportunities for students to learn about the capabilities and applications of such machines. Refurbishing is in the plans for this summer.
8. **Refurbishing the room** with to finalize a "showplace" look and feel. The room is used for ISE open house events, and represents the ISE program in many ways.

Going toward the fall and the expected resumption of on-campus instruction and activities, we are looking forward to hosting classes and visitors in the "new" and much improved CIM lab.