

MAJOR IN COMPUTER ENGINEERING, VLSI AND INTEGRATED CIRCUITS CONCENTRATION

Very large-scale integration, or VLSI, is the process used to design and create computer chips that enable everything from smart watches to virtual reality applications. This concentration offers students a foundation in computer engineering with specialized training in the VLSI and microelectronics disciplines. VLSI focuses on developing advanced electronic circuits and systems to compute massive amounts of data and turn it into meaningful information. For example, when sensors on self-driving cars collect data to assess the vehicle's surroundings, such as lane markings, pedestrians, and road signs, VLSI provides the "smarts" to turn that sensing data into actionable insights to control the car. Coursework in this concentration focuses on applications of key computer engineering principles in the areas of digital systems, computer-aided design, integrated circuits, embedded systems and microelectronics, computer networks, and more. These courses will enable and encourage students to design, analyze, optimize, and implement components, circuits, and systems that are essential in our daily lives.