

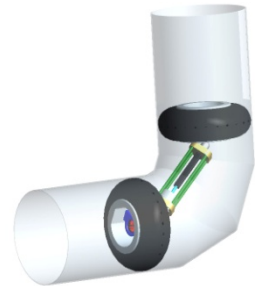
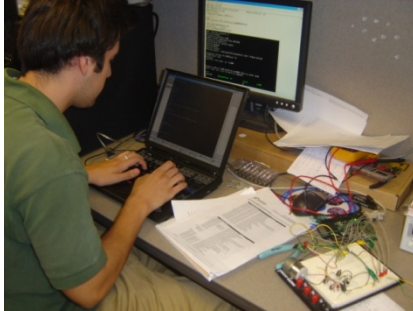


UNC CHARLOTTE

Embedded Systems and Autonomous Robotics Lab

Department of Electrical and Computer Engineering

Faculty director: James M. Conrad, Ph.D., PE, PMP, Professor



The Embedded Systems and Autonomous Vehicle Lab has a long history of university/industry collaboration with companies like Frontline Test Equipment, iRobot, Zapata Engineering, Emerson, Renesas, and National Instruments. Graduated students currently work in embedded systems jobs at Qualcomm, Texas Instruments, Intel, General Dynamics, Dematic, Seagate, and The Mathworks. The lab director, Professor James Conrad, has over 25 years of experience in the embedded systems field in academia and at IBM, Ericsson/Sony Ericsson, and several start-ups.

Areas of Expertise:

- Microcontroller/microprocessor-based systems design (TI, Atmel, Renesas, Microchip, Cypress, Xilinx, others)
- Embedded systems software development and testing
- Sensor development and use, including wireless sensor networks
- Autonomous robotics – design, assembly, sensing, actuation, control, and path planning

Resources:

- 500 square-feet of indoor lab space, 500 square-feet of garage lab space, two Faraday cages
- Computing systems and software compilers
- Microcontroller/microprocessor development boards
- Sensing, actuation and wireless devices
- Prototyping machines and tools (board etching/milling machine, commercial soldering stations, drill press, jigsaw, 3-D microscope)
- Mobile robotics platforms (commercial: National Instruments DaNI robots, GEARS vehicles, iRobot Roomba and Creates, drones/quadrotors; custom: pipe-crawler, tele-presence, wheeled).
- Autonomous All-Terrain Vehicle (Honda FourTrax ATV)

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