Madhuparna Roy

• 4103 N. Mission Road • Tallahassee, FL 32303 • 615-653-1640 • mr13@my.fsu.edu •
www.linkedin.com/in/madhuparnaroy

EDUCATION

Florida State University, Tallahassee, FL August 2015
Industrial and Manufacturing Engineering (Thesis), Master of Science, GPA 3.7/4

Jawaharlal Nehru Technological University, Andhra Pradesh, India June 2012
Electrical and Electronics Engineering Bachelor of Technology, GPA 3.5/4

EXPERIENCE

- **Dimensional analysis of additive manufactured mold tooling for composite production**

  High Performance Materials Institute at Florida State University, 2013-2015

- Additive manufactured soluble/dissolvable molds for smart composites reduces secondary wear and the need for post-machining of the structural component.
- The soluble mold is 3D printed according to the desired dimensions and geometry allowing the integration of negative drafts, spliced components and complex and holistic structures.
- However, products manufactured from low-end machines suffer from the issue of low dimensional accuracy.
- The aim is to detect and model this interference to ultimately create better molding and tooling options for advanced composites which otherwise requires longer fabrication time, making it a costly process and restraining factor while using soluble molds to allow easy incorporation of devices in composite panels.

- **Refurbishment of a Drop-Weight Impact Hammer**

  High Performance Materials Institute at Florida State University, May 2013

- Drop-weight tests are primarily used to perform mechanical tests on materials. The in-house drop weight impact hammer is used for testing composite panels and is equipped with a force sensor and photo gates to measure the intensity of the impact and the velocity of the hammer respectively.
- A BNC 2110 DAQ system along with NI LabView system design software and MATLAB were used to obtain and record the data during an impact tests on composite panels.

- **Vibration Sensing and Analysis using LabView**

  GRIET, Jawaharlal Nehru Technological University, 2012

- The primary objective of this project was to use an accelerometer to monitor the vibration signatures of a machine to determine if the machine is operating properly.
- Using the NI USB-6008 Data Acquisition (DAQ) device and NI LabView system design software, the data from the accelerometer was parsed, analyzed using Fast Fourier Transform (FFT).
- The quality of the machine was determined by comparing data obtained with values specified by ISO standards.

- **Development of an Electronic Voting Machine**

  GRIET, Jawaharlal Nehru Technological University, 2011

- This project presented a way to develop an electronic voting machine, which displayed the count of votes on an LCD screen.
- The user could cast their vote through a set of switches (one for each candidate). After every cast of vote, the subsequent count can be seen on the LCD.
- The circuit used AT89C51 microcontroller and is based on assembly language programming.
- The software platforms used in this project were Keil uVision3 and C programming.

- **VisionTrix workshop**

  GRIET, Jawaharlal Nehru Technological University, 2010

- The machine-based was aimed at understanding, programming and designing the whole system of making a robot with a camera to follow a colored ball using image acquisition, image processing, decision making and motion control using MATLAB.

PUBLICATIONS/CONFERENCES

1. Conference Paper:
   Preliminary Investigation: Additive Manufacturing of Soluble Mold Tooling for Embedded devices in Composite structures
   Madhuparna Roy, Kunal Joshi, Taniwa Ndebele, Kaivon Williams, David Olawale, Tarik J. Dickens
   CAMX, October 13-16, 2013, Orlando, FL.

COMPUTER SKILLS

- C and C++
- MS Excel
- MATLAB
- Minitab
- EagleCAD
- MS Word
- Windows XP, 7, 8
- Multisim
- Arena
- Geomagic Control
- MS PowerPoint
- LabView
- SolidWorks
- Design Expert

EXTRA CURRICULAR ACTIVITIES

- Member of the Golden Key International Honor Society, May 2013-Present.
- President of the Indian Students Association of Tallahassee (INSAT) at the Florida State University, 2014-2015.
- Teaching Assistant for Computer Integrated Manufacturing, Industrial and Manufacturing Engineering Department, Florida State University, Fall 2013.
- Volunteered for outreach activities by connecting elementary and middle school students with STEM activities, 2013-2014.
- Entrepreneur of a home-based cake shop while pursuing my undergraduate studies. Made cakes to order resulting in a significant increase in sales while gaining first-hand experience of managing a business.
- Served as the Vice-chair of the IEEE student chapter at GRIET, Hyderabad, 2009-2012.

**References upon request*