Andrew Manoel Rodriguez

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OBJECTIVE

I am interested in developing professional designs for analog and digital circuits in a teamwork-oriented, hands-on environment.

EDUCATION & CERTIFICATIONS

Rutgers University, New Brunswick, NJ — May 2014

Bachelor of Science in Electrical and Computer Engineering
(Minor in Physics)

NCEES Fundamentals of Engineering Exam

Passed the Fundamentals of Engineering Exam on February 9, 2015.

MEMBERSHIP AND EXPERIENCE

Liberty Science Center – Exhibit Technician — November 2014 – Present

- Involved in meetings to develop the future LSC Makerspace.
- Create custom parts for exhibits using various power tools.
- Continuously teach wiring and wiring tricks with interested co-workers.

MAGFest – Volunteer

- Served as troubleshooter for consoles and arcade machines during the Music and Gaming Festival hosted in National Harbor, Maryland.

The Daily Targum – Science Co-Founder — Nov. 2013 – May 2014

- Created the first lasting science section in the newspaper's 150-year history.
- Coordinated writers and interviews for writers; edited their works.
- Managed the twitter account associated with the section.

PROJECTS

Appliance-Powering Bikes

Redesigned and implemented new wiring for an exercise bike for the Energy Quest exhibit in Liberty Science Center. Using AC generators and relays, was able to safely power a radio and a blender. Reduced maintenance time drastically with the new design.

Brain-to-Phone Linking Application

Using the NeuroSky Mindwave Mobile headset and its Bluetooth SDK, created an Android application in Android Studio to associate phone events with facial gestures.

Multi-Stage Amplifier Circuit

Created a multi-stage amplifier circuit to demonstrate the behaviors of different types of amplifier systems and feedback loops. The circuit was designed in MultiSIM and created and analyzed physically.

Arcade Machines [On-going]

Assist arcades in maintaining arcade machines including, but not limited to, screw and sensor replacement.

Skittles Sorter

Created a functioning machine to sort Skittles candies by color using Arduino hardware and the Arduino IDE.

COURSES

Analog Electronics

- Analyzed the large- and small-scale signal responses of BJT and MOSFET amplifiers
- Identified significance of negative feedback and amplifier stability
- Developed various multistage and differential signal amplifiers

Electric Energy Conversion

- Operation and analysis of transformers using electromagnetic fields
- Discerning the advantages and disadvantages of differing DC motors
- Applications of the power triangle on electrical systems

Digital Signal Processing

- Analog and digital filter design for digital audio applications
- Analog-to-digital and digital-to-analog converter systems
- Sampling and quantization for digital audio applications

SKILLS

Software: MATLAB, OrCAD/MultiSIM, Fritzing, SolidWorks

Programming Languages: C++, C, Java, Javascript

Languages: English, Spanish

REFERENCES

Melanie Groves (Science Editor [Trained]) – Phone: (732) 710 – 7424, E-mail: dtsciwriters@gmail.com

Maureen Boyle (Exhibit Operations Coordinator) – Phone: (201) 736 – 2661, E-mail: mboyle@lsc.org

Vaishali Gauba (News Editor) – Phone: (908) 300 – 2776