

Frank Elsivan DuBose

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Education

HARVARD UNIVERSITY

Concentration Candidate in Electrical Engineering, Secondary Degree Candidate in Psychology

Relevant courses: Solid-State Electronics, Physics, Probability, Social Psychology, Personality Psychology

3.32 GPA

Cambridge, MA

May 2017

UNIVERSIDAD CARLOS III DE MADRID

Study abroad term; coursework includes industrial automation (PLC, ladder logic experience)

Madrid, Spain

Fall 2015

ATHENS ACADEMY

800 SAT Math, 730 SAT Verbal, 710 SAT Written, 35 ACT

Athens, GA

May 2013

Design and Engineering Projects

OPERATIONAL TRANSCONDUCTANCE AMPLIFIER

Final Project, ES-154: Electronic Devices and Circuits

Cambridge, MA

April 2017

Analyzed two-stage folded cascode MOSFET amplifier and sized transistors appropriately

- Characterized standard $.18\mu\text{m}$ NMOS and PMOS transistors in Cadence SPICE
- Predicted amp performance prior to simulating
- Used Cadence characterizations to size all transistors and compared final Cadence simulation to initial analysis

AUDIO SYSTEM – SPEAKERS AND AMPLIFIERS

Personal Research & Development Project

Cambridge, MA & Madison, GA

May 2016 – September 2016

Completed design and assembly of ported subwoofer, MTM stereo cabinets, preamp & power amplifiers

- 100W/channel LM3886 amplifiers
- Learned EAGLE and designed amplifier PCBs
- Constructed appropriate linear power supplies
- Modeled & built stereo and sub cabinets, minimizing potential for standing waves
- Debugged all circuitry in electronics lab

GAIT ANALYSIS DEVICE

Team Member (1 of 4), ES-227: Medical Device Design

Cambridge, MA

January 2016 – May 2016

Semester-long project prototyping wearable running device to identify injurious running form

- Became topic expert through scientific and market research of issue and solutions
- Contributed to solution design iterations
- Responsible for restructuring data in Matlab
- Personally credited as significant contributor to team cohesion and morale

Joy of Electronics (ES-52) BICYCLE SAFETY SYSTEM

Team Member (1 of 3)

Cambridge, MA

April 2015 – May 2015

Bicycle circuit aimed at improving safety and featuring numerous mixed-signal components

- Designed clock signal integral to circuit functionality
- Collaborated on analog speedometer
- Designed digital odometer using various ICs
- Assisted in integration of speedometer, odometer, proximity sensor, turn signals

Leadership Experience

EXPRESSIONS DANCE CREW

Choreographer

Cambridge, MA

September – October 2016, February – March 2017

Organized 4 hours of weekly rehearsal, choreographed for 6+ hours weekly, arranged show lighting and formations, managed attendance and knowledge levels of team members, arranged social events for team bonding

HARVARD SUMMER SCHOOL

Proctor (2015, 2016), Assistant Coordinator (2015)

Cambridge, MA

Summer 2015, Summer 2016

As proctor, met weekly with 30 students, coordinated curfew checks, publicized events. As assistant coordinator, finalized logistics for 25+ trips, trained proctors to lead trips, communicated with venue administrators.

HARVARD CITYSTEP

Teacher, Music Coordinator

Cambridge, MA

September 2014 - April 2015

Instructed dance-oriented class twice a week in local middle school. Taught dances and helped students choreograph arrangements to be performed at end-of-year show. Composed music to be used in show through weekly feedback meetings with colleagues and assisted with team bonding in company-wide meetings each Sunday

Work History and Skills

Work History: Benchmark Automation, Georgia Civil, Harvard Summer School, Harvard Dorm Crew

Programming/Software: Experience with C, SQL, Matlab, HTML, CSS, Python, Unity Pro, Eagle, Cadence

Intermediate Spanish: 4 years of high school Spanish, 2 semesters of college Spanish, semester abroad in Spain

Creative Design: Painting, drawing, photography, pottery, 3D design, woodworking

Electronics: Analog and digital signals, soldering, oscilloscopes, power supplies, AC and DC signals