DENNIS RICH

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EDUCATION

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN
Electrical Engineering and Engineering Physics
Expected May 2019 | GPA: 4.0

HONORS

Chancellor's Scholar

Ford Foundation Engineering Scholar

ICORLab Funding Representative
ACT: 35/36 SAT: 2380/2400

SKILLS

SOFTWARE SKILLS

MATLAB • C++ • Python • HTML/Javascript • Eagle Circuit CAD • Autodesk Inventor • Visual Molecular Dynamics

LABORATORY SKILLS

Circuit Design and Testing
FPGA • Logic Design

Fabrication
E-beam • Lithography

Characterization
SEM • Profilometry

Machining
Saws • Grinders • Lathes • Drills

COURSES

Advanced Circuit Design • Digital System Design • Semiconductor Electronics • Advanced Electromagnetics • Computer Systems and Programming I and II • Quantum Mechanics I and II • Web Technologies • Creative Writing • Public Speaking

PRESENTATIONS

Controlling phase change: Drying-up under water
November 2014 | American Physical Society | San Francisco, California

RESEARCH EXPERIENCE

PROJECT LEADER Innovative Compound Semiconductor Laboratory
University of Illinois at Urbana-Champaign
October 2015 – Present

- Developed a new CMOS fabrication process and continues to lead efforts to see it realized in a groundbreaking paper
- Programmed a MATLAB analysis tool for stress calculations
- Designed instruments and processes and instructed others in their use
- Fabricated and analyzed samples in a cleanroom environment

LABORATORY RESEARCHER Patankar Research Group
Northwestern University
May 2014 – August 2014

- Programmed a thorough simulation in C++ to analyze a waterproof system
- Designed unique mathematical methods of free energy calculation
- Strongly supported guiding hypothesis with concrete results

LABORATORY RESEARCHER Mesoscopic Physics Group
Northwestern University
May 2013 - August 2013

- Analyzed carbon nanotube structures with a self-taught knowledge framework
- Presented conclusions based on data from a wide variety of laboratory instruments
- Programmed a unique GUI to automate the nanotube production process

LEADERSHIP

PROJECT LEAD AND SOCIAL CHAIR Engineers Without Borders
September 2015 - Present
Project Lead - Guatemala Water Project

- Directed engineering students in building water delivery infrastructure
- Managed flow of over $10,000 and coordinated ideas and designs to produce successful results

Social Chair

- Conceived of and organized events that raised hundreds of dollars
- Attracted a campus-wide audience by directing targeted advertising campaigns

DISPLAY ELECTRONICS LEADER Formula Electric Racing
September 2015 - Present

- Guided members through a rigorous circuit design process
- Evaluated members' designs and gave constructive feedback
- Created original, case-specific control and output circuitry

ADDITIONAL EXPERIENCE

TUTOR AND ETHICS FACILITATOR Illinois Math and Science Academy
September 2013 - June 2015

- Developed patience and confidence necessary to guide students to deeper understanding
- Adapted to individual learning needs by thinking on the fly

IMPROV COMEDY CLUB Illinois Math and Science Academy
September 2014 - June 2015

- Fluently created context and quickly improvised solutions to seemingly unsalvageable scenes
- Read fellow actors' cues confidently in a variety of situations