DENNIS RICH

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Website | dennisrich.me

EDUCATION

University of Illinois
Dual B.S. in Electrical Engineering and Engineering Physics
GPA: 4.0/4.0
Champaign, IL | Expected May 2019

Related Coursework

Semiconductor Analysis	Advanced Fabrication Laboratory	Advanced Electromagnetics
Linear Algebra	Quantum Mechanics I and II	Computer Systems and Programming I and II

RESEARCH EXPERIENCE

Innovative Compound Semiconductor Laboratory
Project Leader
University of Illinois
October 2015 - Present

- Developed new CMOS fabrication process independently, leading lab members in its implementation
- Programmed MATLAB analysis tool with user interface for theoretical stress-induced cracking calculations
- Fabricated and analyzed samples with lithography, e-beam, profilometry, and more in cleanroom environment

Patankar Research Group
Computational Analytics Researcher
Northwestern University
May 2014 – August 2014

- Programmed thorough simulation in C++ to analyze waterproof system
- Implemented original mathematical methods of analysis, generating free energy data that supported guiding hypothesis

Mesoscopic Physics Group
Laboratory Researcher
Northwestern University
May 2013 – August 2013

- Synthesized and analyzed carbon nanotube structures with CVD, AFM, chemical analysis, and self-taught knowledge
- Programmed GUI in C from the ground up to communicate with instruments and automate the synthesis process

LEADERSHIP

Engineers Without Borders
Project Chair, *Guatemala Water Project*
University of Illinois
September 2015 - Present

- Managed a total of $10,000 in project budget while directing fundraisers that contributed significantly to that amount
- Oversaw design workshops and coordinated team ideas to implement water delivery infrastructure in Guatemala

Formula Electric Racing
Subsystem Leader, *Low-Voltage Electronics*
University of Illinois
September 2015 - Present

- Designed and implemented circuitry to control time-sensitive signals with frequency-based processing methods
- Guided new members through a rigorous circuit design process, evaluating designs and giving constructive feedback

Improvisational Acting Club
Group Leader
Illinois Math and Science Academy
September 2014 - June 2015

- Directed practices and read fellow actors' cues confidently in a variety of situations, quickly communicating new ideas

SKILLS

Laboratory

Fabrication: E-beam, photolithography, masked wet etching, electroplating, mechanical thin-film separation
Characterization: AFM, SEM, Profilometry, Raman spectroscopy, Nomarski microscopy

Software

Experienced: MATLAB, C, C++, Visual Molecular Dynamics, Eagle Circuit CAD, Autodesk Inventor
Familiar: LTSpice, Python, HTML/Javascript

AWARDS AND HONORS

Chancellor's Scholar - 120 freshmen selected from 7,000: the highest academic honors program at UIUC 2015-2019
Ford Foundation Engineering Scholar - 100 freshmen selected from 7,000 2015-2016
ICORLab Funding Representative - Selected to present research to represent lab in important funding talks 2015-Present

PUBLICATIONS AND PRESENTATIONS

Controlling phase change: Drying-up under water or staying wet during boiling
Jones, Paul, Adrian Kirn, **Dennis Rich**, Ashley Ellion, and Neelesh Patankar. *APS Meeting Abstracts.* November 2014.

High-performance thin-film GaN transistors through controlled spalling
Rich, Dennis, Kai Zhang, and Can Bayram. *In progress*, expected September 2017.