

YU-WEN (WENDY) LIN

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EDUCATION

University of California, Berkeley

Aug 2018-Present

Ph.D. Scholar in Electrical Engineering and Computer Science

Berkeley, CA

Berkeley Education Alliance for Research in Singapore (BEARS)

Relevant coursework: Optimization model in Engineering, Machine Learning, Deep Reinforcement Learning, Linear System Theory, Nonlinear Systems, Theoretical Statistics

Georgia Institute of Technology

Aug 2015-May 2018

Bachelor of Science in Electrical Engineering; GPA: 3.8/4.0

Atlanta, GA

RESEARCH INTEREST

Optimization, Machine Learning, Control Systems, and their applications to Smart Buildings.

AWARDS AND HONOR

- Singapore-Berkeley Building Efficiency and Sustainability in the Tropics (SinBerBEST) Graduate fellowship, National Research Foundation (NRF), Singapore 2018-Present
- Member, Tau Beta Pi Engineering Honor Society 2017-Present
- Opportunity Research Scholar, Georgia Tech 2016-2018
- Summer Undergraduate Research Fellowship, Purdue University 2017
- Best Research Presentation Award at GT ORS Research Competition 2016 & 2017

PREPRINTS

- Ioannis C. Konstantakopoulos, Hari Prasanna Das, Andrew R. Barkan, Shiyong He, Tanya Veeravalli, Huihan Liu, Aummul Baneen Manasawala, **Yu-Wen Lin** and Costas J. Spanos, "Design, Benchmarking and Explainability Analysis of a Game-Theoretic Framework towards Energy Efficiency in Smart Infrastructure," *arXiv preprint arXiv:1910.07899*, 2019.

PUBLICATIONS

- **Yu-wen Lin**, Evan L Schlenker, Zhou Zhiguang, Peter Bermel (2017), "Radiative Cooling Experiment," <https://nanohub.org/resources/radcool>. (DOI: 10.4231/D3DR2PB4W).
- **Yu-wen Lin**, Evan L Schlenker, Zhou Zhiguang, Peter Bermel (2017), "RadCool: a Web-enabled Simulation Tool for Radiative Cooling," <https://nanohub.org/resources/26902>.

RELEVANT PROJECTS

Hysteresis in thermal comfort (Ongoing)

- Designing a physical experiment to capture hysteresis effect on human thermal discomfort and ambient temperature
- Creating a data-driven controller that is able to minimize energy cost and maximize occupants thermal comfort

Building Control via Deep Reinforcement Learning

- Obtained the optimal control strategy to reduce energy consumption while maintaining occupants thermal comfort
- Created a large-scale virtual building environment testbed to allow the RL algorithms to be tested on

Autonomous Low Frequency Radio Wave Receiver

- Designed a embedded computing-on-the-edge receiver that is able to detect very low frequency radio waves (3-30 kHz) to characterize Earth's D-region ionosphere in real-time and identify phase instability from collected signal data taking the place of larger immovable modern models
- Created a printed circuit board of an eighth order low pass filter by modifying the currently existing circuit board with Eagle CAD software, and ensured successful data collection from the antenna and propagation to the ADC

RadCool: A Web-enabled Simulation Tool for Radiative Cooling

- Published a simulation tool that models radiative cooling and estimates the heat transfer between solar cells, coating materials and the environment. The output of the tool provides a graph that compares between different coating materials, their radiative heat values, and the solar cell temperatures overtime
- Developed the tool using Rappture for the interactive interface and Python for the algorithm

PROFESSIONAL/RESEARCH EXPERIENCE

Hon Hai Precision Industry Co., Ltd. (Foxconn Technology Group) May 2018 - August 2018
Operation Intern *Taipei, Taiwan*

- Facilitated communication between technical and market teams to meet client's specifications and product deadlines
- Performed overseas client outreach for company's product promotion, with 2 successful deals
- Developed a labor phase organizational production line still referenced by project managers including materials production cost, on site labor costs, additional service fees and presented to the department and general manager

Georgia Tech Low Frequency Lab October 2016 - May 2018
Undergraduate Research Assistant under Dr. Morris Cohen *Atlanta, GA*

- Simulated and tested circuits for the filter design using LT Spice to ensure the functionality of the design
- Soldered components onto physical PCB, characterized the custom filter with a vector network analyzer to ensure filter fulfills the requirements receiver, and preliminary experiments confirmed the functionality as expected

Network for Computational Nanotechnology May 2017 - August 2017
Research Intern under Dr. Peter Bermel *West Lafayette, IN*

- Published a simulation tool (RadCool) that models radiative cooling to help designing new experiments
- Developed Radcool using Rappture for the interactive interface and Python for the algorithm
- Tool actively serves at least 8 different users and is run an average of 32 times per month
- Knowledge of photovoltaic cells, thermophotovoltaic devices, and radiative cooling to design the simulation tool

Ultrafast Biomedical Optics Group July 2014-August 2014
Research Intern under Dr. Tzu-Ming Liu *Taipei, Taiwan*

- The goal is to determine whether femtosecond lasers could be applied to human skin to detect different kinds of white blood cells; it can potentially allow doctors to examine a patient's blood without having to draw a blood sample
- Facilitated the preparation of human clinical trials and further optical inspections
- Isolated white blood cells and mounted of specimens on the microscope
- Collected and Analyzed nonlinear optical images using femtosecond lasers

TECHNICAL STRENGTHS

Software	Microsoft Office, Eagle CAD, NI Multisim, Quartus II, LT Spice, Mathcad
Instrumentation	Mbed microcontroller, Oscilloscope, Function generator, Soldering
Programming	Python, C, MATLAB, Assembly, Java, VHDL
Communication	Public Speaking, Leadership

REFERENCE

Costas J. Spanos

spanos@berkeley.edu

Andrew S. Grove Distinguished Professor, EECS, UC Berkeley

Director and CEO, Berkeley Education Alliance for Research in Singapore (BEARS)