

YU-WEN (WENDY) LIN

406 Cory Hall, Berkeley, CA 94720 · (206)-886-7535 · yuwen.lin@berkeley.edu · linyuwen.com

EDUCATION

University of California, Berkeley

Ph.D. Scholar in Electrical Engineering and Computer Science
Berkeley Education Alliance for Research in Singapore (BEARS)

Jan 2021-Present
Berkeley, CA

University of California, Berkeley

M.S. in Electrical Engineering and Computer Science

Aug 2018-Dec 2020
Berkeley, CA

Thesis: Developing a Digital Twin for Indoor Environments: A Case Study

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

Georgia Institute of Technology

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

Aug 2015-May 2018
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

SELECTED PUBLICATIONS

- **Yu-Wen Lin.** Developing a Digital Twin for Indoor Environments: A Case Study (2020). *Master Thesis.*
- **Yu-Wen Lin,** Evan L Schlenker, Zhou Zhiguang, Peter Bermel (2017). RadCool: a Web-enabled Simulation Tool for Radiative Cooling. *nanoHUB.*

RELEVANT PROJECTS

Digital Twin for Smart Buildings (Ongoing)

- Establish a live connection between the physical space and the virtual model via Internet of Things (IoT).
- Create digital twin model by utilizing existing modeling software: EnergyPlus and Modelica.
- Application driven project for fault diagnosis and optimal operation to maintain occupants' satisfaction as well as conserving energy

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

TEACHING EXPERIENCE

EE 16A Designing Information Devices and Systems I

Graduate Student Instructor

Fall 2020

UC Berkeley

CS 188 Introduction to Artificial Intelligence

Graduate Student Instructor

Spring 2021

UC Berkeley

PROFESSIONAL/RESEARCH EXPERIENCE

Hon Hai Precision Industry Co., Ltd. (Foxconn Technology Group)

Operation Intern

May 2018 - August 2018

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
- Optimized and 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

Undergraduate Research Assistant under Dr. Morris Cohen

October 2016 - May 2018

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

Research Intern under Dr. Peter Bermel

May 2017 - August 2017

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

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)