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EDUCATION

Missouri University of Science & Technology (Missouri S&T) Ph.D. in Electrical Engineering	<i>Aug. 2016-May. 2020</i> GPA: 4.0/4.0
Missouri University of Science & Technology (Missouri S&T) M.S. in Electrical Engineering	<i>Aug. 2014-May. 2016</i> GPA: 4.0/4.0
Huazhong University of Science & Technology (HUST) B.S. in Electronic Information and Communications (Honors Program)	<i>Sept. 2010-Jun. 2014</i> GPA: 3.7/4.0

HONORS AND AWARDS

IEEE EMC Society Best Student EMC Hardware Design Award First Author. Granted by IEEE Electromagnetic Compatibility Society.	<i>Mar. 2015</i>
Exceptional Performance in the International EM Proficiency Test Top 4% among 265 exam takers from Japan, HK, Korea, Taiwan, and U.S.	<i>Oct. 2014</i>
Graduate Research Assistant Scholarship Full research scholarship granted by EMC Laboratory, Missouri S&T.	<i>Sept. 2014</i>
National Prize in Mathematical Modeling Contest CUMCM Top 5% among all the participants from China, Singapore, and U.S.	<i>Sept. 2012</i>

WORKING EXPERIENCES

Tesla, Inc. Sr. Electronic Design Engineer, Autopilot Group	<i>June. 2020-Present</i> <i>Palo Alto, CA, U.S.</i>
<ul style="list-style-type: none">Signal/power integrity design and validation for the next-generation Autopilot hardware.High-speed channel characterization by full-wave simulations & micro-probing measurements.System bring-up and SerDes testing.	
Google LLC Hardware Intern, Pixel Phone SIPI Team	<i>Jan. 2019-July. 2019</i> <i>Mountain View, CA, U.S.</i>
<ul style="list-style-type: none">End-to-end power distribution network (PDN) modeling for mobile platforms.Debugging on the USB charging desense issue.Conducted various RFI/PDN measurements, including micro-probing and near-field scanning.	
ConvenientPower Systems (CPS), Wireless Charging Solutions. Manager, RX System Group	<i>Apr. 2017-Aug. 2018</i> <i>Chengdu, China</i>
<ul style="list-style-type: none">Provided IC-based wireless power receiver solutions for mobile phones & accessories.Developed the world's 1st wireless charging solution for earpods (Meizu POP) with Qi certification.Integrated the 1st 10W fast wireless charging function to mobile phone (Gionee M7P) in China.	
H3C Technologies Co., Ltd. Software Engineer (Part-Time)	<i>May. 2011-Jan. 2013</i> <i>Wuhan, China</i>
<ul style="list-style-type: none">Software development (C/C++) in user space and kernel for Linux-based router system.Using the CMM methodology, completed HLD and UT cases. Deployed GTest environment.	

- Implemented the network quality analyzer based on C for the H3C Comware V7 platform.

ACADEMIC PROJECTS

Modeling on Wireless Power Transfer (WPT) Systems

- Developed accurate rectifier characterization method and improved system-level model.
- Proposed pre-design and post-design design methodology to optimize coils and system.
- Built Qi and A4WP standards compatible WPT prototypes. Demos at CES, Las Vegas, in 2016.

Modeling on Power Distribution Network (PDN)

- Developed a novel pattern-based analytical method for PCB-level PDN impedance calculations.
- Developed a topology-based accurate VRM model to optimize PDN low frequency responses.

Simulation of HPM / ESD Effects on Semiconductor Device

- Analyzed the device physics of failures caused by HPM / ESD injections.
- Predicted the upset events in a particle-level perspective using Monte Carlo method.

Automated Channel Emulator Based on MEMS Switch

- Designed multiple transmission line channels with good signal integrity performance.
- Integrated MEMS switch for channel selection, under the control of an embedded system.
- Implemented the automated control logic using Python script.

Heat Sink / IC Radiation Field Transformation

- Constructed an equivalent field source by the near-field scanning technique.
- Developed and validated a far-field transformation procedure for the heat sink / IC structure.

Wireless Smoke Detection Based on Structure Similarity of Video

- Designed the smoke detection algorithm using structure similarity of video frames.
- Implemented the hardware and software of the WiFi-UART module to transmit smoke alarm.

Open-Source Mirror Site Development

- Built the 1st and largest open-source mirror site in Central China.
- Completed the rsync synchronizing script (bash), the status updating script (Perl), and the front-end web page (HTML/PHP/Javascript).

RESEARCH

Areas of Interests: signal & power integrity, wireless power transfer, device modeling.

Publications: 13 peer-reviewed journals and conference papers, published in IEEE Transactions on Power Electronics and IEEE Transactions on Electromagnetic Compatibility. 7 US patents.

Presentations: 2 talks and 4 posters on CEMC IAB Meeting in 2014, 2016, and 2019.

SKILLS

Hardware

SIPI, RF and power delivery system design, schematic, PCB layout, bring-up and testing

Measurement

Oscilloscope, VNA, SA, TDR
Near-field scanning, micro-probing

Software

C/C++, Matlab, Perl, Python, JMP,
Latex, Javascript, HTML/CSS, TCL/Tk

Simulation

RF simulation: HFSS, CST, EMC Studio
Circuit simulation: ADS, HSPICE, PowerSI