

Taehwan Kim

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RESEARCH INTERESTS	Electronic-photonic integrated systems for communication/sensing Electronic-photonic integration technology & design methodology development Analog/mixed-signal integrated circuit design	
EDUCATION	University of California, Berkeley Ph.D. Student in Electrical Engineering and Computer Science Seoul National University B.S. in Electrical and Computer Engineering B.A. in Economics (Double major)	<i>Aug. 2014 to Present</i> <i>Mar. 2007 to Feb. 2014</i>
RESEARCH EXPERIENCE	Graduate Student Researcher Integrated Systems Group, University of California, Berkeley (Advisor: Vladimir Stojanović) <ul style="list-style-type: none">Optical phased array based systems in electronic-photonic heterogeneous integration platform<ul style="list-style-type: none">Developing single-chip solution for ultra high-resolution laser radar (LIDAR) and free-space optical communication links leveraging optical phased arraysTape-out in early 2016 (65nm 10LPe process)Model-predictive control based algorithm for equalization of high-speed links<ul style="list-style-type: none">Transmitter-side algorithm based on digital channel models for modular, energy-efficient equalization of asymmetric high-speed interfacesBuilt chips in 28nm FDSOI & 45nm SOI processChip measurement in progress Undergraduate Researcher Mixed-Signal IC and System Group, Seoul National University (Advisor: Jaeha Kim) <ul style="list-style-type: none">Formal verification of analog/mixed-signal circuits<ul style="list-style-type: none">Developed an algorithm to verify the correct start-up behavior of ring oscillators in presence of variabilityImplemented GCHECK: a Python-based tool for detection of start-up failures of coupled ring oscillators (transferred to Samsung Electronics)Variability-aware circuit optimization<ul style="list-style-type: none">Developing global optimizer for analog/mixed-signal circuits based on statistical metamodeling	<i>Aug. 2014 to present</i> <i>Jun. 2012 to present</i>
PUBLICATIONS	T. Kim , D.-G. Song, S. Youn, J. Park, H. Park, and J. Kim, “Verifying Start-Up Failures in Coupled Ring Oscillators in Presence of Variability Using Predictive Global Optimization,” in <i>Proc. IEEE/ACM International Conference on Computer-Aided Design (ICCAD)</i> , 2013. J. Kim, J. Lee, D.-G. Song, T. Kim , K.-H. Kim, S. Jung, and S. Youn, “Discretization and Discrimination Methods for Design, Verification, and Testing of Analog/Mixed Signal Circuits,” in <i>Proc. Custom Integrated Circuits Conference (CICC)</i> , 2013.	
HONORS & AWARDS	Kwanjeong Scholarship for Abroad Studies National Scholarship for Science and Engineering, Korea Science Foundation	<i>2014-2018</i> <i>2007-2013</i>
SKILLS	Languages: C, C++, Python, Verilog Tools: Custom IC (Virtuoso, ADS) and VLSI design tools (DC, ICC, RC, SOC-ENC), MATLAB Operating Systems: OSX, Linux, Windows	