

Hao YU

Associate Professor (tenured)

Electrical and Electronic

Dr. Yu obtained his B.S. degree from Fudan University (Shanghai China) and obtained M.S/Ph. D degrees both from electrical engineering department at UCLA, USA, with major of integrated circuit and embedded computing. He was a senior research staff at Berkeley Design Automation (BDA), and later with school of electrical and electronic engineering at Nanyang Technological University (NTU), Singapore. Dr. Yu has 243 peer-reviewed and referred publications [conference (163) and journal (80)], 7 books, 9 book chapters, **1 best paper award in ACM Transactions on Design Automation of Electronic Systems (TODAES)**, 1 Springer PhD thesis award (advisor), 3 best paper award nominations (DAC' 06, ICCAD' 06, ASP-DAC' 12), 3 student paper competition finalists (SiRF' 13, RFIC' 13, IMS' 15), 2 keynote talks, 1 inventor award from semiconductor research cooperation (SRC), and 20 granted patents. He is **Distinguished Lecturer of IEEE Circuit and System** (2017-), **Associate Editor** of Elsevier Integration, the VLSI Journal (2016-), Elsevier Microelectronics Journal (2016-), Nature Scientific Reports (2016-), ACM Trans. on Embedded Computing Systems (2017-) and IEEE Trans. on Biomedical Circuits and Systems (2017-),

and **Technical Program Committee** member of several conferences (DAC' 15-16, DATE' 15-17, ICCAD' 10-12, ISLPED' 13-15' 17, ASP-DAC' 11-13' 15-16, A-SSCC' 13-17, APMC' 17, BioCAS' 16, ICCD' 11-13, ISCAS' 10-13, RFIT' 15, IWS' 13-14, NANOARCH' 12-13, ISQED' 09). His main research interest is about smart energy-efficient data analytics, links and sensors with multi-million government (**PI of 1 NRF-CRP, 2 MOE-TIER-2** etc.) and industry (**Intel, Huawei, BGI** etc.) funding. His industry work at BDA is also recognized with an EDN magazine innovation award and multi-million venture capital funding. He is a senior member of IEEE and member of ACM.

Education

2002 – 2007 University of California at Los Angeles Los Angeles (CA, USA)

- Degree: M.S. (2005)/Ph. D. (2007) Electrical Engineering
- Major: Integrated circuit and embedded computing system
- Research Work: High-speed and high frequency RF and interconnect circuit design

1994 – 1999 Fudan University (Shanghai, China)

- Degree: B. S. with honors in physics (Solid-State)

- Research Work: Non-equilibrium transport phenomena in nano-scale semiconductor devices

Working Experiences

2017-present Southern University of Technology and Science (Shenzhen China)

- Associate Professor: School of Electrical and Electronic Engineering
2017 The University of Hong Kong (offered Associate Professor and not committed due to 1000-talent-plan)

2010–2017 Nanyang Technological University (Singapore)

- Assistant Professor: School of Electrical and Electronic Engineering
- Program Director of VIRTUS IC Design Center of Excellence since 2010
- Program Director of VALENS Biomedical Center of Excellence since 2014
- Cluster Director of Energy Research Institute @ NTU since 2016 since 2016

2007 – 2009 Berkeley Design Automation Inc (Santa Clara, CA, USA)

Senior technical staff: analog/RF circuit and system design platform;
system-level design platform of 60GHz communication system

Secured 3M USD investment from Panasonic Investment in 2009

2001 – 2003 Analog Devices Inc (Wilmington, MA, USA)

Research summer intern: design and simulation of ADI' s high-speed ADC and RF platform

Research Introduction

Research Interest

CMOS Emerging Technology for Data Sensing, Links and Analytics

- High-speed 3D-IC and THz interconnect
- Energy-efficient data analytics accelerator (CNN/BNN/TNN machine learning SoC)
- Smart multi-modal (pH, image, THz) sensor for personalized biomedical diagnosis

Research Funding

Total External S\$11,064,035 (S\$9,528,785 in last-3-year)

Total Internal S\$765,000

Competitive External Research Agency Funding (PI)

- Singapore national research foundation competitive-research-program (CRP) fund 2016, "CMOS Terahertz Interconnect towards Tera-scale

Personalized Cloud Server” , (Program PI Hao Yu) (S\$5,485,680)

01-September-2016—31-August-2021. (on-going)

- Singapore NRF-SERTD fund 2016, “Smart multi-layer energy system” , (sub-project 5 PI Hao Yu) (S\$840,400/S\$4,106,000), 01-September-2016—31-August-2021. (on-going)
- Singapore NRF-SERTD fund 2016, “Smart multi-layer energy system” , (sub-project 4 PI Hao Yu) (S\$1,160,400/S\$2,718,000), 01-September-2016—31-August-2021. (on-going)
- **Singapore ministry of education Tier-2 fund 2016, “Sparse-represented Non-volatile In-memory Accelerator for Big-Data Analytics” , (PI Hao Yu) (S\$955,472), 01-June-2016—31-May-2019. (on-going)**
- MIT-SMART POC fund 2015, “Non-invasive CMOS THz imager” , (PI Hao Yu) (S\$50,000), 01-August-2015—31-July-2016. (completed)
- **Singapore ministry of education Tier-2 fund 2011, “A 3D Design Platform of Multi- Processor System-on-Chip for New Media Application” , (PI Hao Yu) (S\$857,125), 01-June-2011—31-Decmber-2014. (completed)**
- **Singapore national research foundation proof-of-concept (POC) fund, 2010 “Rapid Design Verification Platform for Analog/ RF Circuits beyond the Scale of 65nm and 60GHz” , (PI Hao Yu) (S\$250,000), 26-Nov-2010—25-Nov-2011. (completed)**

Competitive External Research Agency Funding (CO-PI)

- Singapore national research foundation competitive-research-program (CRP) fund 2012, “Domain-wall based Nonvolatile Memory and Logics” , (Single Co-PI, Hao Yu) (S\$480,000/ S\$6,153,959), 01-Jan-2013—31-October-2017.
(on-going)
- Singapore national research foundation proof-of-concept (POC) fund, 2012 “Ion Camera: A Real-Time High-sensitivity and High-resolution ISFET-based Ion Detection System for Food and Drug Safety” , (Co-PI Hao Yu) (NA/S\$245,000), 26-July-2012—25-July-2013. (completed)
- Singapore A*STAR public sector funding (PSF) 2012, “Power-efficient Multicore Scalable System for Cloud Computing using Emerging Technologies” , (Single Co-PI Hao Yu) (NA/S\$630,000), 06-Feb-2012—05-Dec-2015. (completed)
- Singapore ministry of defense innovative research program (DIRP) fund 2010, “Vertical Integration of MEMS and ASIC” , (Single Co-PI Hao Yu) (S\$296,125/S\$592,250), 01-June-2010—31-May-2014. (completed)

Competitive External Industrial Funding (PI)

- China Huawei Technologies Co Ltd., industry research collaboration project fund 2017, “CMOS 140GHz phase-arrayed communication” , (PI Hao Yu) (rmb 180,000), 01-Jun-2017—present
- China Huawei Technologies Co Ltd., industry research collaboration project fund 2017, “CMOS+ReRAM machine learning chip” , (PI Hao Yu) (rmb 180,000), 01-Jun-2017—present

- China BGI Technologies Co Ltd., industry research collaboration project fund 2017, “pA current readout circuit for DNA sequencing chip” , (PI Hao Yu) (rmb 80,000), 01-Jun-2017—present
- China DJI Technologies Co Ltd., industry research collaboration project fund 2017, “Binary CNN CHip” , (PI Hao Yu) (rmb 80,000), 01-Jun-2017—present
- Taiwan TSMC Inc., industry research collaboration project fund 2014, “Provision of In-kind Multi-projects Wafer Fabrication Service- Cyber Shuttle (Projects 1, 4 and 5)” , (PI Hao Yu) (S\$ 650,000 in-kind silicon chip fabrication cost), 01-Dec-2014—present. (completed and renewed)
- China Huawei Technologies Co Ltd., industry research collaboration project fund 2014, “Memory Computing Architecture Based on Low Power Dissipation on Intra-Chip Interconnection” , (PI Hao Yu) (S\$ 108,400), 01-Jun-2014—01-Dec-2015. (completed)
- USA Intel Corporation, industry research collaboration project fund 2014, “Advanced Analog I/O Modeling” , (PI Hao Yu) (S\$ 34,757), 01-Jun-2014—01-Dec-2015. (completed)
- China Huawei Technologies Co Ltd., industry research collaboration project fund 2014, “Non-volatile Memory for Big-data Storage” , (PI Hao Yu) (S\$ 184,476), 01-Jun-2014—01-Dec-2015. (completed)
- Singapore JTC Corporation, industry research collaboration project fund 2014, “Smart Building Management System with Dynamic Indoor Occupant

Positioning System” , (PI Hao Yu) (S\$ 162,000), 01-Jun-2014-01—Dec-2015.

(completed)

- China Chongqing Optoelectronic Tech. Corp., industry research collaboration project fund 2013, “Advanced CMOS Image Sensor” , (PI Hao Yu) (S\$ 67,200), 01-Jun-2013—01-Dec-2015. (completed)
- Singapore HiSilicon , industry research collaboration project fund 2012, “Digital Assisted 60GHz Power Amplifier Design” , (PI Hao Yu) (S\$ 102,000), 01-Aug-2012—01-Oct-2013. (completed)
- Singapore Bio-X(s) , industry research contract project fund 2012, “CMOS and ISFET Sensor Technology for Micro Bioactivity Analyzer” , (PI Hao Yu) (S\$ 30,000), 01-Feb-2012—31-July-2012. (completed)

NTU Internal Funding (PI)

- Ministry of education Tier-1 fund, “Design of THz interconnect by meta-devices” , (PI Hao Yu) (S\$160,000), 01-Mar-2015—28-May-2017 (on-going)
- iFood grant, “Food Toxin Pre-screening by High-throughput and Accurate Ion-channel Diagnosis Using Large Arrayed CMOS ISFET Sensor” (PI Hao Yu) (S\$140,000), 15-Sep-2014—15-Sep-2016. (on-going)
- NTU EEE seed fund, “All-CMOS Tera Hertz Interconnect towards Exa-scale Data Server” (PI Hao Yu) (S\$50,000), 01-Apr-2015—31-Mar-2016. (completed)
- NTU ERIAN seed fund, “IoT based home energy management system” , (PI Hao Yu) (S\$108,000), 01-Jan-2012—01-Jan-2013. (completed)

- Ministry of education Tier-1 fund, "Design Exploration for High Data-rate Wireless Communication Systems at 60GHz for New Media Applications" , (PI Hao Yu) (S\$200,000), 01-Mar-2011—28-May-2014 (completed)
- NTU startup grant, "System-level Design Methodology for a Robust Heterogeneous 3D Integration" , (PI Hao Yu) (S\$100,000), 05-Oct-2009—04-Jan-2013. (completed)

Papers

1. Xu Liu[^], Xiwei Huang, Yu Jiang, Hang Xu, Jing Guo, Han Wei Hou, Mei Yan, and Hao Yu, "A Microfluidic Cytometer for Complete Blood Count with a 3.2-Megapixel, 1.1- μ m-pitch Super-Resolution Image Sensor in 65-nm BSI CMOS" , IEEE Transaction on Biomedical Circuits and Systems, 2017.
(10.1109/TBCAS.2017.2697451) (Impact Factor 3.15)
2. Leibin Ni*, Zichuan Liu, Rajiv V. Joshi and Hao Yu, "An Energy-efficient Digital ReRAM-crossbar based CNN with Bitwise Parallelism," IEEE Journal of Exploratory Solid-State Computational Devices and Circuits, 2017.
(10.1109/JXCDC.2017.2697910)
3. Dongsuk Jeon, Qing Dong, Yejoong Kim, Xiaolong Wang, Shuai Chen, Hao Yu, David Blaauw, Dennis Sylvester, "A 23mW Face Recognition Processor with Mostly-Read 5T Memory in 40nm CMOS" . IEEE Journal of Solid-State Circuits (JSSC), January 2017 (doi:10.1109/JSSC.2017.2661838) (Impact Factor 3.29)

4. Yuan Liang[^], Hao Yu, Jincal Wen, Anak Agung Alit Apriyana, Nan Li, Yu Luo, and Lingling Sun, "On-chip sub-terahertz surface plasmon polariton transmission lines with mode converter in CMOS" , Nature Scientific Reports, article# 30063, July 2016. (Impact Factor 5.58)
5. Yuhao Wang*, Leibin Ni, Chip-Hong Chang and Hao Yu, "DW-AES: A Domain-wall Nanowire based AES for High Throughput and Energy-efficient Data Encryption in Non-volatile Memory" , IEEE Transactions on Information Forensics & Security, 2016. (doi: 10.1109/TIFS.2016.2576903) (Impact Factor 2.40)
6. Yang Shang*, Hao Yu, Yuan Liang, Xiaojun Bi, and Muthukumaraswamy Annamalai, "Millimeter-wave Sources at 60 GHz and 140 GHz by Magnetic Plasmon Waveguide based In-phase Coupled Oscillator Network in 65-nm CMOS" , IEEE Transactions on Microwave Theory and Techniques, vol.64, no.5, pp1560-1571, May 2016. (Impact Factor 2.24)
7. Sai Manoj P.D.*, Hao Yu, Hantao Huang and Dongjun Xu, "A Q-Learning based Self-adaptive I/O Communication for 2.5D Integrated Many-core Microprocessor and Memory" , IEEE Transactions on Computers, vol.65, no.4, pp1185-1196, April 2016. (Impact Factor 1.47)
8. Yuan Liang[^], Hao Yu, Haochi Zhang, Chang Yang, and Tiejun Cui, "On-chip sub-terahertz surface plasmon polariton transmission lines in CMOS" , Nature Scientific Reports, article# 14853, October 2015. (Impact Factor 5.58)
9. Xiwei Huang*, Hao Yu, Xu Liu, Yu Jiang, Mei Yan, and Dongping Wu, "A Dual-mode Large-arrayed CMOS ISFET Sensor for Accurate and High-throughput

pH Sensing in Biomedical Diagnosis” , IEEE Transactions on Biomedical Engineering (TBME), vol.62, no.9, pp2224–2233, September 2015. (Featured Article in September 2015) (Impact Factor 2.23)

10. Yang Shang*, Hao Yu, Sanming Hu, Yuan Liang, Xiaojun Bi, and Muthukumaraswamy Annamalai, “High-sensitivity CMOS Super-regenerative Receiver with Quench-controlled High-Q Metamaterial Resonator for Millimeter-wave Imaging at 96 and 135 GHz” , IEEE Transactions on Microwave Theory and Techniques, vol.62, no.12, pp3095-3106, December 2014 (Impact Factor 2.94)

Honors and Awards

PI’ s Recognitions

- **Chinese 1000-talent-plan (young investigator) (2017-)**
- **Distinguished Lecturer of IEEE Circuits and Systems Society (2017-)**
- **Best Journal Paper Award, at ACM on Design Automation of Electronic Systems (TODAES) (2010)**
- News Cover, NTU Hey Magazine (2016)
- EEE Research Report Highlight (2016, 2014, 2013, 2012)
- Keynote talk, IEEE Int. Conf. on Communication Technology (2015)
- Keynote talk, Int. Symposium of Microchemistry and Microsystems (2014)
- Highlighted paper with media cover at Medical Design Technology Magazine, IEEE Symposia on VLSI Technology and Circuits (2014)
- IEEE senior member (2013)

- Highlighted paper with media cover at I-Micronews, at IEEE International 3D System Integration Conference (3DIC) (2012)
- Best Paper Award Nomination, at IEEE/ACM Asia and South Pacific Design Automation Conference (ASP-DAC) (2012)
- Semiconductor research cooperation (USA) inventor award (2009)
- Best Paper Award Nomination, at IEEE/ACM International Conference on Computer Aided Design (2006)
- Best Paper Award Nomination, at ACM/IEEE/ACM Design Automation Conference (2006)
- EDN Magazine Innovation Award for the product team of the fast Analog/RF SPICE simulator at Berkeley Design Automation (2007)
- Fudan selected students (top-5) of mini-cuspea program (by Nobel laureate Prof. T.D. Lee) in physics department (1999)
- Fudan-Guanghua scholarship (top-3) (1994-1998), Fudan-Samsung scholarship (top-1) for outstanding student in science and engineering (1999)

Student awards

- **Springer PhD Thesis Award (Advisor of Shang Yang), Springer (2016)**
- Student Paper Competition Final List (Advisor of Ma Shunli), IEEE International Microwave Symposium (IMS' 15) (2015)

- **Best Student Paper Award (Advisor of Shang Yang), IEEE Singapore Microwave Theory and Technique/Antenna Propagation Joint Chapter (2014)**
- ACM Student Research Competition Final List (Advisor of Wang Yuhao), at IEEE/ACM International Conference on Computer Aided Design (2013)
- **R. Newton Young Scholar (Advisor of Sai Manoj), at ACM/IEEE Design Automation Conference (2013)**
- Student Paper Competition Final List (Advisor of Shang Yang), at IEEE International Symposium of Radio-frequency Integrated Circuits (RFIC' 13) (2013)
- Student Paper Competition 3rd Place (Advisor of Shang Yang), at IEEE Topical Meeting on Silicon Monolithic Integrated Circuits in RF Systems (SiRF' 13) (2013)
- **First Prize (10,000S\$) (Advisor of Huang Hantao), at Infineon Energy Efficient Electronic Design Contest (2013)**
- Best Paper Award (Advisor of Huang Xiwei), at Tokyo-university Workshop on Microfluidics for Environment and Biomedical Engineering (2012)

Other recognitions

- Top-10 downloaded IEEE journal, " An Energy-Efficient Nonvolatile In-Memory Computing Architecture for Extreme Learning Machine by Domain-Wall Nanowire Devices", IEEE Transactions on Nanotechnology (TNANO) in February (2016)

- Featured IEEE article, "A Dual-mode Large-arrayed CMOS ISFET Sensor for Accurate and High-throughput pH Sensing in Biomedical Diagnosis" , IEEE Transactions on Biomedical Engineering (TBME) in September (2015)
- Top-10 downloaded IEEE journal, " A 2.5D Memory-logic Integration with Data-pattern Aware Memory Controller", IEEE Design & Test of Computers (DTC) in August (2015)
- Top-10 downloaded IEEE journal (for 6 months), "A 239-281GHz CMOS Receiver with On-chip Circular-polarized Substrate Integrated Waveguide Antenna for Sub-terahertz Imaging", IEEE Transactions on Terahertz Science and Technology in November (2014)
- Top-10 downloaded IEEE journal, "Variability-Aware Parametric Yield Estimation: Concepts, Algorithms and Challenges," IEEE Design & Test of Computers (DTC) in August (2014)
- Top-10 downloaded IEEE journal, "Design and Analysis of Wide Frequency-tuning-range CMOS 60GHz VCO by Switching Inductor Loaded Transformer" , IEEE Transactions on Circuits and Systems I (TCAS-I) in March (2014)

Teaching Experience

Teaching Courses

- SUSTech EE334 Advanced IC Design - Machine Learning On-chip ~30 students
- SUSTech EE334 Advanced IC Design – Microprocessor design ~30 students
- NTU EE2004 Digital Electronics: ~700 students

- NTU EE4340 VLSI System Design: ~20 students
- NTU EE3019 Integrated Electronics: ~20 students

Mentoring/Mentored Students

PhD students

SN	Name	Starting date	Thesis topic	Status/ graduation date	Current job
1	Yu Jiang	PhD (01/2016)	Multi-modal biomedical sensor	QE in 01/2017	PhD on-going
2	Zichuan Liu	PhD (08/2015)	Machine learning on-chip	QE in 01/2017	PhD on-going
3	Leibin Ni	PhD (08/2014)	Non-volatile Memory	QE in 09/2016	PhD on-going
4	Hantao Huang	PhD (01/2014)	Machine learning on-chip	QE passed in 11/2015	PhD on-going
5	Sai Manoj P.D.	PhD (08/2012)	2.5D and 3D I/O Designs for Energy-efficient Memory-logic	defended in 05/2015 and graduated in	To be faculty track at Technological University of

			Integration towards Thousand-core on-chip	08/2016	Vienna, Europe
6	Yang Shang	PhD (08/2010)	Metamaterial based CMOS Terahertz Integrated Circuits	defended in 02/2015 and graduated in 08/2015	now senior R&D engineer at Advantest (set up R&D center), Singapore
7	Yuhao Wang	PhD (08/2011)	Non-Volatile In-Memory Computing	defended in 11/2014 and graduated in 08/2015	now postdoc researcher at Carnegie Mellon University, USA
8	Xiwei Huang	PhD (01/2010)	CMOS Multimodal Sensor Based Lab-on-a-Chip System for Personalized Bio-imaging Diagnosis	defended in 12/2014 and graduated in 08/2015	To be faculty at SJTU, China

9	Wei Fei	PhD (01/2010)	Design of CMOS 60GHz Giga-bps Communication System with CRLH T-line for High Output Power Density and Wide Tuning Range	defended in 10/2014 and graduated in 08/2015	now senior R&D engineer Qualcomm to set up R&D center, Singapore
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MSc/MEng students

SN	Name	Starting date	Thesis topic	Status/ graduation date	Current job
1	Zhenyu Wu	MSc (08/2016)	Cyber-physical System Design: Smart Sesnor	Started in 08/2016	MSc on-going
2	Rai Suleman Khalid	MEng (08/2015)	Cyber-physical System Design: Smart Building	QE in 09/2016	MEng on-going
3	Hang Xu	MEng (08/2015)	Cyber-physical System Design:	QE passed in 08/2016	MEng on-going

			Smart Building		
4	Huan Yang	MSc (08/2015)	Cyber-physical System Design: Smart Sensor	Graduated in 05/2016	PhD student in Singapore
5	Yuehua Cai	MEng (08/2014)	Cyber-physical System Design: Smart Building	Graduated in05/2016	Engineer in Singapore
6	Ganesan Vivek	MSc (08/2012)	CMOS Tera-Hertz Circuit Design: MIMO Antenna	Graduated in 05/2013	Engineer in Singapore
7	Danqing Qiu	MSc (08/2012)	Cyber-physical System Design: Smart Building	Graduated in 05/2013	Engineer in Singapore

Undergraduate students (with project)

SN	Name	Starting date	Thesis topic	Status/ graduation date	Current job
1	Yifei Hu	WHU-FYP	Cyber-physical System Design:	Graduated	MSc student in

		(01/2016)	Smart Sensor	in 05/2016	Singapore
2	Zhenyu Wu	WHU-FYP (01/2016)	Cyber-physical System Design: Smart Sensor	Graduated in 05/2016	MSc student in Singapore
3	Yutong Liu	WHU-FYP (01/2016)	Cyber-physical System Design: Smart Building	Graduated in 05/2016	MSc student in Singapore
4	Xiaochuan Liu	WHU-FYP (01/2015)	Cyber-physical System Design: Smart Sensor	Graduated in 05/2015	MSc student in Singapore
5	Huan Yang	WHU-FYP (01/2015)	Cyber-physical System Design: Smart Sensor	Graduated in 05/2015	MSc/PhD student in Singapore
6	Hang Xu	WHU-FYP (01/2015)	Cyber-physical System Design: Smart Building	Graduated in 05/2015	MEng student in Singapore
7	Mohamed J. A. Ali	FYP (01/2015)	Cyber-physical System Design: Smart Building	Graduated in 05/2015	Engineer in Singapore
8	Guoliang	FYP	Cyber-physical	Graduated	Engineer

	Low	(01/2015)	System Design: Smart Battery	in 05/2015	in Singapore
9	Ashok Kavya	FYP (08/2014)	Cyber-physical System Design: Smart Building	Graduated in 05/2014	PhD student at Georgia Tech., USA
10	Yizhou He	URECA (08/2014)	Cyber-physical System Design: Smart Building	on-going in BS program	on-going
11	Arvind B. Ramesh	URECA (08/2014)	Cyber-physical System Design: Smart Sensor	on-going in BS program	on-going
12	Xiaochen Wang	URECA/FYP (08/2013)	Cyber-physical System Design: Smart Sensor	Graduated in 05/2014	Engineer in Singapore
13	Hantao Huang	URECA/FYP (08/2012)	Cyber-physical System Design: Smart Building	Graduated in 05/2013	PhD student in Singapore
14	Chao Niu	FYP (08/2012)	Cyber-physical System Design:	Graduated in 05/2013	Engineer in

			Smart Sensor		Singapore
15	Yew Swee Ang	FYP (08/2012)	Cyber-physical System Design: Smart Sensor	Graduated in 05/2013	Engineer in Singapore
16	Seow Yi Da	FYP (08/2011)	Cyber-physical System Design: Smart Sensor	Graduated in 05/2012	Engineer in Singapore
17	Radhika Bhar	URECA (08/2011)	Cyber-physical System Design: Smart Sensor	Graduated in 05/2013	PhD student in Singapore
18	Muhammad Khalid Bin Raja Abd Aziz	FYP (08/2009)	Cyber-physical System Design: Smart Building	Graduated in 05/2010	Engineer in Singapore

Training/Trained Research Staff

Full Name of Research Staff

	Title	Status
1.	Anak A. Alit Apriyana Research fellow	In employment

2.	Xiaojian Fu	Research fellow	In employment
3.	Guangyin Feng	Project officer	In employment
4.	Rai S. Khalid	Project officer	In employment
5.	Yuan Liang	Project officer	In employment
6.	Nan Li	Project officer	In employment
7.	Xu Liu	Research fellow	Left service as faculty at BIT
8.	Kanwen Wang	Research fellow	Left service with industry Lab
9.	Chun Zhang	Research fellow	Left service with Xilinx R&D
10.	Dongjun Xu	Research associate	Left service with industry Lab
11.	Xiaolong Wang	Research associate	Left service with industry Lab
12.	Shuai Chen	Research associate	Left service with Baidu R&D
13.	Revanth Nadipalli	Research associate	Left service as PhD at Univ. of Melbourne
14.	Haipeng Fu	Research	Left service as faculty at

	associate	Tianjin Univ.
15. Jin Guo	Project officer	Left service as PhD at Arizona State Univ.
16. Yang Song	Project officer	Left service as PhD at UCSD
17. Wei Wu	Project officer	Left service as PhD at UCLA
18. Deyun Cai	Project officer	Left service with Cadence R&D

PhD Committee Panel Member

Name of Committee	Role	Period
Lim Geok Soon– PhD thesis/oral exam	Examiner/Member	2016
Huang Nan – PhD thesis/oral exam	Examiner/Member	2015
Tan Xiaoliang – PhD thesis/oral exam	Examiner/Member	2015
Zou Qiong – PhD thesis/oral exam	Examiner/Member	2015

Lye Hock Kelvin Chan – PhD thesis/oral exam	Examiner/Member	2014
Anak Agung Alit Apriyana – PhD thesis/oral exam	Examiner/Member	2014
Xiang Yi – PhD thesis/oral exam	Examiner/Member	2014
Bo Hu – PhD thesis/oral exam	Examiner/Member	2014
Ee May Kan – PhD thesis/oral exam	Examiner/Member	2013
Aung Myat Thu Linn – PhD oral exam	Member	2016
Han Jiangan– PhD oral exam	Member	2016
Feifei He – PhD oral exam	Member	2012
Liqin Song – PhD oral exam	Member	2012
Aaron Do – PhD oral exam	Member	2010
Anh Tuan Do – PhD oral exam	Member	2010
Yang Lu – PhD oral exam	Member	2010

Academic Services

Journal Editor Board

- Associate editor, Integration, the VLSI Journal (Elsevier Publishers)
2016-present
- Associate editor, Microelectronics Journal (Elsevier Publishers) 2016-present
- Associate editor, ACM Trans. on Embedded Computing Systems
2016-present
- Associate editor, IEEE Trans. on Biomedical Circuits and Systems
2016-present
- Editorial Board Member of **Nature Scientific Reports** 2016-present

Conference Committee

- **TPC member of IEEE Custom Integrated Circuits Conf. (CICC)**
2017-present
- **IEEE-CAS BioCAS Sub-committee member 2016-present**
- TPC member of IEEE Asian Pacific Microwave Conf. (APMC) 2017-present
- **TPC member of ACM/IEEE Design Automation Conf. (DAC) 2015-2017**
- **TPC member of ACM/IEEE Design Automation and Test Conf. in Europe (DATE) 2015-present**

- TPC Track Chair and session chairman of IEEE Asia and South Pacific Design Automation Conf. (ASP-DAC) 2015-2016
- Special Session Chair of IEEE Int. Conf. EDSSC 2015
- TPC member of IEEE Radio Frequency Integration Technology Symp. (RFIT), 2015
- Special Session Chair of IEEE Int. Symp. Integrated Circuit (ISIC) 2014
- Tutorial Chair of IEEE Asia and South Pacific Design Automation Conf. (ASP-DAC) 2014
- **TPC member and session chairman of IEEE Asian Solid-State Circuit Conf. (ASSCC) 2013-present**
- **TPC member of ACM/IEEE Int. Symp. on Low Power Electronics and Design (ISLPED) 2013-2015, 2017-present**
- Publicity Chair of ACM Symp. of Nano-Architecture (NANOARCH) 2013
- TPC member of IEEE Int. Wireless Symposium (IWS) 2013-2014
- TPC member of IEEE Symp. of Circuit and System (ISCAS) 2013
- TPC member of ACM Int. Symp. of Nanoscale Architectures (NANOARCH) 2012-2013
- **TPC member and session chairman of IEEE/ACM Int. Conf. of Computer-aided Design (ICCAD) 2011-2013**
- TPC member and session chairman of IEEE Asia and South Pacific Design Automation Conf. (ASP-DAC) 2011-2013

- TPC member of IEEE Int. Conf. of Computer Design (ICCD) 2011-2013
- TPC of IEEE/ACM Int. Symposium of Quality Electronic Design (ISQED) 2009

Reviewer

Top-tier Journal

- IEEE: IEEE Journal of Solid State Circuits, IEEE Trans. on Electronic Device (TED), IEEE Trans. on Computers, IEEE Trans. on Microwave Theory and Technology, IEEE Trans. on Circuits and Systems I/II, IEEE Design & Test of Computers, IEEE Trans. on Nanotechnology, IEEE Electronic Device Letters, IEEE Trans. on Computer-Aided Design of Integrated Circuits and Systems, IEEE Trans. on Very Large Scale Integration Systems
- ACM: ACM Trans. on Design Automation of Electronic Systems, ACM Trans. on Embedded Computing Systems, ACM Journal of Emerging Technology of Computing
- Elsevier: VLSI Integration Journal, Microelectronics Journal, Bioelectronics and Biosensors
- Nature: Scientific Report

Invited Talks (selected for recent 3-years)

- Invited conference talk at Int. Conf. on Metamaterials, Photonic Crystals and Plasmonics, **Spain**, Aug. 2016.

- Invited industry talk at Global Foundries, CMOS Emerging Technologies for DNA Sequencing, Singapore, Jul. 2016.
- Invited industry talk at **Intel Lab**, CMOS Emerging Technologies for Big-data Computing System: In-memory Computing, **Oregon USA**, Jun. 2016, 2013.
- Invited industry talk at **IBM Lab**, CMOS Emerging Technologies for Big-data Computing System: Machine Learning Accelerator, **New York USA**, May 2016.
- Invited seminar talk at EE Department, CMOS Emerging Technologies for DNA Sequencing, **Columbia University, New York USA**, May 2016.
- Invited workshop talk at CMOS Emerging Technologies Research Symp., Canada, May 2016.
- Invited conference talk at IEEE Int. Symp. on Circuits and Systems, Canada, May 2016.
- Invited conference workshop talk at Int. Wireless Symp., Shanghai China, Mar. 2016.
- Invited conference talk, "CMOS THz Electronics", IEEE Int. Conf. on Communication Technology, Hangzhou China, Nov. 2015. (**Keynote talk**)
- Invited conference talk at IEEE Int. Conf. on ASIC, Chengdu China, Nov. 2015.
- Invited seminar talk at Faculty of Engineering at Technological University of Vienna, CMOS THz Electronics, **Vienna Austria**, Nov. 2015.
- Invited seminar talk at Faculty of Engineering at RWTH-Aachen University, Energy-efficient Data Analytics, **Aachen Germany**, Nov. 2015.

- Invited seminar talk at ECE Department, CMOS THz Electronics, National University of Singapore, Singapore, Oct. 2015.
- Invited seminar talk at ECE Department, CMOS THz Electronics, HKUST, Hong Kong, Sept. 2015.
- Invited seminar talk at ECE Department, CMOS Emerging Technologies for DNA Sequencing, HKU, Hong Kong, Sep. 2015.
- Invited industry talk at Illumina R&D Center, CMOS Emerging Technologies for DNA Sequencing, **California USA**, Aug., 2015.
- Invited workshop talk at Dagstuhl Seminar 15352 (Selected distinguished computer scientist), **Germany**, Aug. 2015.
- Invited conference talk at IEEE Int. Microwave Workshop Series on Advanced Materials and Processes for RF and THz Applications, Suzhou China, Jul. 2015.
- Invited industry talk at **Oracle Lab**, CMOS Emerging Technologies for Big-data Computing System: THz I/O, **California USA**, Jun. 2015, 2013.
- Invited industry talk at **HP Lab**, CMOS Emerging Technologies for Big-data Computing System: THz I/O, **California USA**, Jun. 2015, 2013.
- Invited conference talk at IEEE Int. Symp. on Circuits and Systems, **Lisbon Portugal**, May 2015.
- Invited workshop talk at Asian Workshop on Smart Sensor Systems, Kyushu Japan, Mar. 2015.
- Invited workshop talk at Int. Wireless Symp., Shenzhen China, Mar. 2015.

- Invited conference talk at Int. Symp. on Integrated Circuits, Singapore, December 2014.
- Invited conference talk at IEEE Radio Frequency Integration Tech. Symp., Hefei China, Aug. 2014.
- Invited conference talk at Int. Symp. on Microchemistry and Microsystems, Singapore, Aug. 2014. (Keynote talk)
- Invited conference talk at Int. Union of Radio Science General Assembly and Scientific Symp., Beijing China, Aug. 2014.
- Invited conference talk at Int. Conf. on Metamaterials, Photonic Crystals and Plasmonics, Singapore, May 2014.
- Invited conference talk at IEEE Asia and South Pacific Design Automation Conf., Singapore, Jan. 2014.
- Invited conference talk at IEEE Int. Symp. on Circuits and Systems, Beijing China, May 2013.
- Invited seminar talk at ECE Department **Northwestern University**, 3D-IC for Big-data Computing System: A Cyber-physical Perspective, **Chicago USA**, Feb. 2013.
- Invited seminar talk at ECEE Department Arizona State University, 3D-IC for Big-data Computing System: A Cyber-physical Perspective, **Arizona USA**, Feb. 2013.

Contact Information

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