Special Event: Student Research Preview (SRP)

Co-Chair: Denis Daly
Apple, MA

Co-Chair: Jerald Yoo
National University of Singapore,
Singapore

The Student Research Preview (SRP) will highlight selected student research projects in progress. The SRP consists of 14 sixty-second presentations followed by a Poster Session, by graduate students from around the world, which have been selected on the basis of a short submission concerning their on-going research. Selection is based on the technical quality and innovation of the work. This year, the SRP will be presented in two theme sections: Analog and RF Circuits and Systems, and Digital and Machine Learning.

The Student Research Preview will include the talk "Career Planning for a Bright (but Unknown) Future" by Dr. Jen Lloyd, Analog Devices. The SRP begins at 8:15am PT on Saturday, February 20th. SRP is open to all ISSCC registrants.

Invited Talk: "Career Planning for a Bright (but Unknown) Future"

For those who have been part of the integrated circuit industry for some time, we have seen amazing changes over the course of our careers, with advances in communication, automotive, digital health, and industrial automation powered by innovation from the circuit and systems community. What kind of changes will we see going forward and how can you plan your research and career for what lies ahead? I'll discuss some thoughts on this topic as an introduction to kick off the Student Research Preview.

Jen Lloyd received S.B., S.M., and Ph.D. degrees in EECS from the Massachusetts Institute of Technology. She started her career as an analog designer at Analog Devices in the High-Speed Converter group, and has contributed to various ADC, DAC and SerDes products for which she holds 9 US patents and several publications. She served on the technical program committee for both the IEEE Custom Integrated Circuits Conference and the IEEE Symposium on VLSI Circuits. She is currently a member of the ISSCC IMMD subcommittee. Jen has led several technology and market segment businesses at ADI, including Healthcare, Consumer and Instrumentation. Dr. Lloyd is now Vice President for the Precision Technology and Platforms Group, in which she drives market-leading products and solutions across ADI's franchises in amplifiers, converters, and isolation.

Jen Lloyd
Analog Devices, CA

Session 1: Analog and RF Circuits and Systems

Session Co-Chair
Masoud Babaie
Delft University of Technology
The Netherlands

Session Co-Chair
Filip Tavernier
KU Leuven, Belgium

The analog and RF circuits and systems session begins with presentations on mm-wave phased array 5G transceivers using techniques including DPD and wireless power transfer. Low power wireless circuits are presented including a BLE transmitter and a body-coupled transmitter. The session also includes a cryogenic PLL with ultra-low jitter, a PAM4 photonic transmitter and a bio-engineered sensor.

1.1
Michihiro Ide
Tokyo Institute of Technology, Japan

1.2
Zheng Li
Tokyo Institute of Technology, Japan

1.3
Zheng Sun
Tokyo Institute of Technology, Japan

1.4
Qiwen Liao
Chinese Academy of Sciences, China

1.5
Byeongseol Kim
Kangwon National University, Korea

1.6
Jiang Gong
Delft University of Technology, The Netherlands

1.7
Qijun Liu
Boston University, MA

Session 2: Digital and Machine Learning

Session Co-Chair
Jae-Sun Seo
Arizona State University, AZ

Session Co-Chair
Hayun Chung
Korea University, Korea

The digital and machine learning session includes several presentations on advanced neural networks, including a mixed-mode artificial neural network classifier and an AI accelerator for both training and inference. A universal decoder for next generation wireless systems is presented. Finally, two ultra-low power vision sensors are presented which include embedded computing.

2.1
Ahmed Reda Mohamed
Shanghai Jiao Tong University, China

2.5
Massimo Giordano
Stanford University, CA
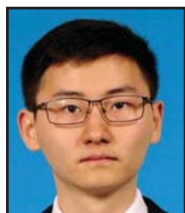
2.2
Qin Li
Tsinghua University, China

2.6
Jiangchao Wu
University of Macau, Macau
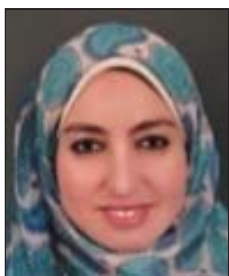
2.3
Arslan Riaz
Boston University, MA

2.7
Han Xu
Tsinghua University, China

2.4
Yu-Chun Ding
National Tsing Hua University, Taiwan

Poster Session

Poster Session Co-Chair
Dina El-Damak
Zewail City of Science at Technology
Egypt

Poster Session Co-Chair
Hao Gao
Eindhoven University of Technology
The Netherlands

SRP Organizing Committee

Co-Chair:	Denis Daly, Apple
Co-Chair:	Jerald Yoo, National University of Singapore, Singapore
Advisor:	Anantha Chandrakasan, MIT
Advisor:	Kevin Zhang, TSMC
Advisor:	Jan Van der Spiegel, University of Pennsylvania
Media/Publications:	Laura Fujino, University of Toronto
A/V:	Trudy Stetzler, Halliburton, Houston, TX

Committee Members

Masoud Babaie	Delft University of Technology, Netherlands	Carolina Mora Lopez	imec, Belgium
Hsin-Shu Chen	National Taiwan University, Taiwan	Negar Reiskarimian	MIT, MA
Po-Hung Chen	National Chiao Tung University, Taiwan	Jae-sun Seo	Arizona State University, AZ
Hayun Chung	Korea University, Korea	Atsushi Shirane	Tokyo Institute of Technology, Japan
Denis Daly	Apple, MA	Yildiz Sinangil	Apple, CA
Zeynep Deniz	IBM, NY	Mahmut Sinangil	TSMC, CA
Dina El-Damak	Zewail City of Science at Technology, Egypt	Filip Tavernier	KU Leuven, Belgium
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Yoonmyung Lee	SungKyunKwan University, Korea	Samira Zaliasl	Ferric, NY
Shih-Chii Liu	University of Zurich/ETH Zurich, Switzerland	Milin Zhang	Tsinghua University, China
		Yan Zhu	University of Macau, China