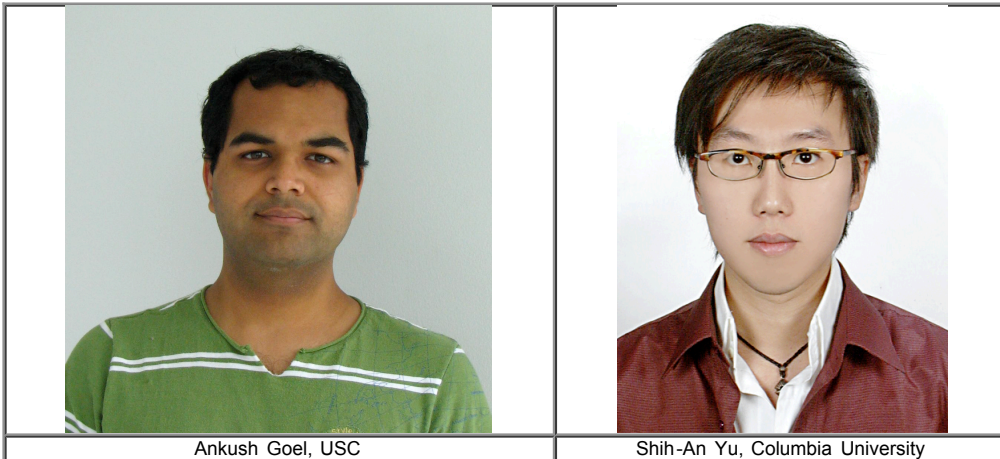




Ankush Goel and Shih-An Yu Receive SSCS Predoctoral Fellowships

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Ankush Goel of USC and Shih-An Yu of Columbia University have won the Solid-State Circuits Society Predoctoral Fellowship for 2008 - 2009. Their advisors are Hossein Hashemi and Peter Kinget, respectively.



Ankush Goel, USC

Shih-An Yu, Columbia University

This year the Society had nine very qualified nominees, seven from U.S. Universities and one each from China and India. The nominations were reviewed and ranked by a team of four Professors from leading universities. (None of these universities had nominees in the running for this year's awards.)

According to the reviewing team, Ankush and Shih-An "stand out through their excellent academic records combined with an impressive list of high-quality journal and conference publications." In addition, they said "the research of the two recipients is very innovative and has the potential to have significant impact on the field of solid-state circuits." Please join us in congratulating Ankush and Shih-An for their achievements and for receiving this year's Fellowship awards.

Ankush Goel received the B.Tech. degree in electrical engineering from the Indian Institute of Technology-Madras, Chennai, India in 2003. He was the recipient of the Prof. Achim Bopp Endowment Prize for best undergraduate hardware project. He received the M.S. degree in electrical engineering from the University of Southern California (USC), Los Angeles with a GPA of 4.0 in 2006. Earlier that year, he received an award from USC for outstanding academic achievement. He is currently pursuing his Ph.D. degree at USC and is a research assistant in the Electrical Engineering - Electrophysics Department.

From 2003-2004, he was an Analog Design Engineer with Texas Instruments, India. While he was with Texas Instruments, he designed a slew-rate controlled pad driver in digital CMOS process for USB 2.0.

Mr. Goel is a recipient of the 2007 USC Annenberg Graduate Fellowship. During the summer of 2008 he was an intern at IBM T.J. Watson Research Center, NY, and worked on the design of a compact, low-power, low phase-noise, wideband digitally controlled oscillator.

At USC, his research has focused on the analysis of nonlinear systems exhibiting multiple modes of operation and exploiting them for the implementation of multi-mode multi-antenna reconfigurable radios. He has designed and developed the theory of concurrent dual-frequency oscillators, dual-loop phased-locked loops and concurrent phased-arrays. He has published two MTT papers and one in JSSC related to that work. During his Ph.D. studies, he also worked on design and theory of sub-dB noise-figure, high-gain, wideband LNA.

Shih-An Yu received the B.S. and M.S. degree in electrical engineering from National Taiwan University (NTU), Taipei, Taiwan in 1999 and 2001, respectively. For his M.S. research, he worked on wideband amplifiers with multiple feedback loops, and 5GHz VCO and image rejection receiver designs for ISM band applications. From 2001 to 2003, he designed self-calibrated fractional-N frequency synthesizers and mixed-mode analog baseband circuits for multi-standard mobile phone and WLAN transceivers at VIA Technologies Inc., Taiwan. From 2003 to 2005, he was a research assistant at NTU and did research on

quantization noise suppression in fractional-N frequency synthesizers. He also designed the baseband circuits for an energy-efficient transceiver for long-term wireless bioactivity monitoring applications, presented at the ISSCC in 2006.

Since 2006, he has been working towards his Ph.D. degree at Columbia University in New York, NY under the guidance of Prof. Peter Kinget. His research focuses on highly scalable design techniques for RF frequency synthesizers addressing ultra-low supply voltage challenges, robustness issues and area scaling challenges in extremely scaled CMOS technologies. He has designed a 0.65V fractional-N 2.4GHz frequency synthesizer that was presented at ISSCC 2007. He was also part of the student team designing a 0.6V highly integrated receiver for 2.4GHz applications in 90nm CMOS that was published at ISSCC 2008. His latest results on a 0.042mm² fully integrated dual band 2.5/5.0GHz analog PLL in a 45nm CMOS technology will be presented at ESSCIRC 2008. This ultra-compact PLL incorporates a customized stacked capacitor-inductor structure that overlays the tank inductor over the loop filter capacitor, achieving a significant reduction of the active area. He is also investigating architectures for ultra wide-band, multi-standard frequency synthesizers for software-defined radio applications. At Bell Laboratories, Alcatel-Lucent, Murray Hill, NJ, he is participating in the design of a fractional-N frequency synthesizer operating from 50MHz to 8GHz.

Mr. Yu was the recipient of the 2008 Outstanding Student Designer Award presented by Analog Devices, Inc. He has published eight papers in conferences and five papers in Journals. He has one U.S. patent application under review.

The Solid-State Circuits Society grants the Predoctoral Fellowship each year to two deserving graduate students in the field of Solid-State Circuits. These awards provide a \$15,000 stipend and up to \$8,000 in tuition and fees for the student, and an additional \$2,000 for the student's department. The awards are granted to students who show promise for outstanding doctoral research, and who have shown concrete evidence of achievement early in their graduate careers. Nominations are typically due by May 1 of each year; see [//sscs.org/awards/predoctoral.htm](http://sscs.org/awards/predoctoral.htm) for more details on qualifications and the application process.

To view a list of prior Fellowship winners, see [//sscs.org/awards/predoctoral.htm#Pastrecipients](http://sscs.org/awards/predoctoral.htm#Pastrecipients).

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