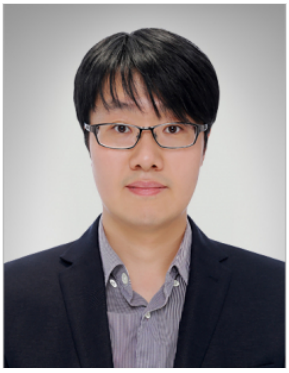

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LAB Engineering BLDG 3. Rm 507

Curriculum Vitae

· 2020~Present: Associate Professor, UNIST
· 2015~2020: Assistant Professor, UNIST
· 2012~2015: Research Scientist, Institute of Microelectronics, A*STAR, Singapore.
· 2008~2012: Senior Research Staff, Samsung Advanced Institute of Technology.

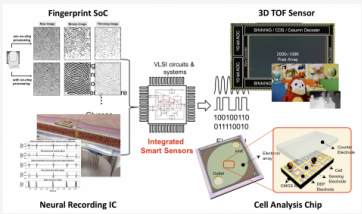
Academic Credential

· 2008: Ph.D. in Electrical Engineering, KAIST.
· 2006~2007: Predoctoral Researcher, University of Minnesota, Twin Cities.
· 2003: M.S. in Electrical Engineering, KAIST.
· 2001: B.S. in Electrical Engineering, POSTECH.

Awards/Honors/Memberships

· International Technical Program Committee at ISSCC, 2019~Present.
· Bronze Prize at Samsung Best Paper Award, Nov. 2011.
· Innovative Invention Award in Samsung Electronics Co. Ltd, Jan. 2009.
· Bronze Prize at Samsung Humantech Thesis, Feb. 2005.
· Member of the Institute of Electrical and Electronics Engineers (IEEE)

Bio-inspired Advanced Sensors Lab
지능형 센서 설계 연구실



Bio-inspired Advanced Sensors Laboratory (BIAS) aims to realize self-contained smart microsystems that will interface people to nature, machine, and even their own bodies with many electronic devices seamlessly. The system will be implemented on a single chip platform based on modern analog and digital VLSI circuits and systems technology. We are especially interested in imaging and bio-related applications for point-of-care diagnostics, human-machine interface, and novel implantable prosthetics.

지능형센서연구실에서는 빛, 온도 등 자연계 신호 뿐 아니라 다양한 생체신호를 정밀하게 감지하여 전기 신호로 변환함으로써 사람들에게 유용한 정보를 줄 수 있는 시스템 구현을 목표로 연구를 진행 중입니다. 이러한 지능형 센서 시스템은 첨단 아날로그 및 디지털 집적회로시스템을 기반으로 개발되며 특히 우리 연구실에서는 영상 및 바이오 센서 관련 분야에 집중하고 있습니다. 현재 진행중인 연구로 무인 자율주행차량에 필수적인 라이다(LiDAR) 센서, 혈액 내의 암세포를 찾아내는 세포 분석 센서, 뇌에 이식하여 뉴런 신호를 직접 읽어내는 뇌신호 검출 센서 등이 있습니다.

관심분야	희망분야
Integrated analog-mixed signal circuit design, Semiconductor sensor interface circuits	Integrated analog-mixed signal circuit design, Advanced sensor interface circuits

Research Keywords and Topics

• 3D image sensor for LiDAR systems in automotives
차량용 라이다 시스템을 위한 3D 영상센서
• Low-power biomedical sensors for point-of-care diagnostics
현장 진단용 저전력 생체 의료 센서
• Implantable/Wearable healthcare smart devices
이식 가능하거나 입을 수 있는 헬스케어 스마트 소자

Research Publications

Y. Park, S.-H. Han, W. Byun, J.-H. Kim, H.-C. Lee, and S.-J. Kim, "A Real-Time Depth of Anesthesia Monitoring System Based on Deep Neural Network With Large EDO Tolerant EEG Analog Front-End," IEEE TBioCAS, accepted to be published.

H. Seo, H. Yoon, D. Kim, J. Kim, S.-J. Kim, J.-H. Chun, and J. Choi, "A 36-channel SPAD-integrated scanning LiDAR sensor with multi-event histogramming TDC and embedded interference filter," in IEEE SOVC, Jun. 2020.

D. Kim, S. Lee, D. Park, C. Piao, J. Park, Y. Ahn, K. Cho, J. Shin, S. M. Song, S.-J. Kim, J.-H. Chun, and J. Choi, "A Dynamic Pseudo 4-Tap CMOS Time-of-Flight Image Sensor with Motion Artifact Suppression and Background Light Cancelling Over 120klux," in IEEE ISSCC, Feb. 2020, pp. 100-101.

S. Lee, D. Park, S.Lee, J. Choi, and S.-J. Kim, "Design of a Time-of-Flight Sensor With Standard Pinned-Photodiode Devices Toward 100-MHz Modulation Frequency," IEEE Access, vol. 7, no. 1, pp. 130451-130459, Sep. 2019.

Patents

Jihyun Cho, Seong-Jin Kim, Jung-Soon Shin, and Euisik Yoon, "Method and apparatus for suppressing background light in time of flight sensor," US Patent #9,786,252, 2017/10.

Seong-Jin Kim, Do Kyoon Kim, Kee Chang Lee, Jeroen Beeckman, Albert Theuwissen, "Filter for selective transmission of visible rays and infrared rays using an electrical signal," US Patent #9,429,781, 2016/08.