

BYEONGJOO AHN

Porter Hall B5, 5000 Forbes Ave, Pittsburgh, PA 15213

Homepage: <https://byeongjooahn.com> ◊ Email: bahn@cmu.edu

RESEARCH INTERESTS

My research interests are in computational imaging and computer vision. I am interested in identifying visible hints offered by our physical surroundings, and developing imaging systems extending the visibility far beyond human ability such as the reconstruction of objects that are not in the direct line of sight.

EDUCATION

Carnegie Mellon University

Ph.D. Candidate in Electrical and Computer Engineering
Advisors: Aswin C. Sankaranarayanan and Ioannis Gkioulekas

Pittsburgh, PA
Sep. 2017 – Present

Seoul National University

M.S. in Electrical Engineering and Computer Science
Advisor: Kyoung Mu Lee
Thesis: “Occlusion-Aware Motion Deblurring for Bilayer Scenes”
Outstanding Thesis Award

Seoul, Korea
Mar. 2012 – Feb. 2014

Seoul National University

B.S. in Electrical and Computer Engineering
Summa Cum Laude

Seoul, Korea
Mar. 2008 – Feb. 2012

WORK EXPERIENCE

Carnegie Mellon University

Research Assistant

Pittsburgh, PA
Sep. 2017 – Present

- Developed imaging method to reconstruct hidden 3D shapes from multiply scattered photon using time-of-flight (ToF) information at picosecond timescale resolution (aka Non-Line-of-Sight Imaging)

Korea Institute of Science and Technology

Research Scientist (LOA), Center for Imaging Media Research

Seoul, Korea
Mar. 2014 – Aug. 2017

- Developed multiple-camera capture system with 3D multi-view deblurring algorithm for dynamic 3D facial reconstruction
- Developed polarized lighting system with an algorithm for real time acquisition of specular and diffuse normal maps from minimal number of polarized images
- Developed Korean food classification web application using Caffe and Flask web server

HP Labs

Research Intern with Dr. Irwin Sobel

Palo Alto, CA
Jan. 2012 – Feb. 2012

- Developed 3D video mobile controller using PTZ robot and Android phone

PUBLICATIONS

“Convolutional Approximations to the General Non-Line-of-Sight Imaging Operator”

Byeongjoo Ahn, Akshat Dave, Ashok Veeraraghavan, Ioannis Gkioulekas, and Aswin C. Sankaranarayanan
IEEE/CVF International Conference on Computer Vision (ICCV), 2019 (Oral Presentation)

“Occlusion-Aware Video Deblurring with a New Layered Blur Model”

Byeongjoo Ahn, Tae Hyun Kim, Wonsik Kim, and Kyoung Mu Lee
arXiv preprint arXiv:1611.09572, 2016

“Reduced Illumination Patterns for Acquisition of Specular and Diffuse Normal Maps”

Byeongjoo Ahn, Junghyun Cho, Taekyung Yoo, and Ig-Jae Kim
ACM SIGGRAPH ASIA Poster, 2016

“Dynamic Scene Deblurring”

Tae Hyun Kim, **Byeongjoo Ahn**, and Kyoung Mu Lee
IEEE International Conference on Computer Vision (ICCV), 2013

AWARDS AND HONORS

Doctoral Study Abroad Scholarship , Korea Foundation for Advanced Studies	2017
Fulbright Graduate Study Award (Declined) , Fulbright	2017
Best Poster Award , KIST R&D EXPO	2014
Outstanding Thesis Award , Department of EECS, Seoul National University	2014
Honorable Mention Award , Samsung Humantech Paper Award	2014
Graduate Scholarship , Kwanjeong Educational Foundation	2012
Presidential Science Scholarship , Korea Student Aid Foundation	2008
Gold Medal , Korea Physics Olympiad	2006

TEACHING

Teaching Assistant, Carnegie Mellon University

· Recitation for 18-290 Signals and Systems

Spring 2019

SERVICES

Reviewer, CVPR 2019; ICCV2019; BMVC 2019

Volunteer, Camera Building Workshop as part of Gelfand Outreach Program at CMU (2019)

Student Volunteer, ACCV 2012

TECHNICAL SKILLS

Proficient with MATLAB, C/C++; Conversant with C#, JavaScript, Python

GRADUATE COURSEWORK

18-771	Linear Systems	Fall 2019
10-707	Deep Learning	Spring 2019
10-725	Convex Optimization	Fall 2018
16-823	Physics based Methods in Vision	Spring 2018
10-701	Introduction to Machine Learning	Spring 2018
16-720B	Computer Vision	Fall 2017
18-793	Image and Video Processing	Fall 2017
36-705	Intermediate Statistics	Fall 2017

Last updated: August 14, 2019