Byeongju Han

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Education

- **Ulsan National Institute of Science and Technology (UNIST)** — **Ulsan, Rep. Korea**
  Combined MS-PH.D. student in EE — *2015–Present*
  Advisor: Jae-Young Sim

- **Ulsan National Institute of Science and Technology (UNIST)** — **Ulsan, Rep. Korea**
  Bachelor of science (B.S.) in EE and CSE — *2009–2015*
  Graduating class: Summa Cum Laude

Honors and Awards

- **Intensive Program in Artificial Intelligence** — **IITP**
  Full-tuition scholoarship for AI courses in Carnegie Mellon University — *2019-2020*

- **NAVER Ph.D. Fellowship** — **NAVER**
  Naver corporation award — *2017*

- **National Science and Engineering Undergraduate Scholarship** — **Korean Government**
  Full-tuition scholarship for undergraduate students — *2013–2014*

- **Overseas Studies Scholarship** — **UNIST**
  Financial aid for study abroad — *2014*

- **IT Master Scholarship** — **KT Corporation**
  Innovative talent scholarship for innovative ideas to lead the global market — *2010*

- **Academic Performance Scholarship** — **UNIST**
  Admission fee and full tuition support — *2009-2011*

Research Interests

- **Reflection removal**
  Remove undesired reflection artifacts from input images taken through glass.
- **Person search**
  Search target persons of the same identity to a query person.
- **Fashion detection**
  Detect cloth regions in an image and classify their classes.
- **Saliency detection**
  Detect visually prominent information from imagery data.
- **Generative model**
  Generate synthetic 2d images or 3d models.

Publications

International Journal of Papers

[1] **Byeong-Ju Han** and Jae-Young Sim, "Single image reflection removal using non-linearly synthesized glass images and semantic context," *IEEE Access*, vol. 7, no. 1, pp. 170796-170806, Nov. 2019.

[2] **Byeong-Ju Han** and Jae-Young Sim, "Glass reflection removal using co-saliency based image alignment and low-rank matrix completion in gradient domain," *IEEE Transactions on Image Processing*, vol. 27, no. 10, pp. 4873-4888, Oct. 2018.

[3] **Byeong-Ju Han** and Jae-Young Sim,"Saliency detection for panoramic landscape images of outdoor scenes," *Journal of Visual Communication and Image Representation*, vol. 49, pp. 27-37, Nov. 2017.

International Conference Papers

[1] **Byeong-Ju Han***, Kuhyeun Ko*, and Jae-Young Sim, "Context-aware unsupervised clustering for person search," (under reivew).

[2] **Byeong-Ju Han**, Kuhyeun Ko, and Jae-Young Sim, "End-to-end trainable trident person search network using adaptive gradient propagation," in *Proc. IEEE ICCV*, 2021.

[3] **Byeong-Ju Han**, Jae-Won Yang, Oggyu Lee, and Jae-Young Sim, "Context-based matching refinement for person search," in *Proc. APSIPA ASC*, 2021.

[4] Eunpil Park, **Byeong-Ju Han**, Seungjoon Yang and Jae-Young Sim, "Video saliency detection using adaptive feature combination and localized saliency computation," in *Proc. APSIPA ASC*, Nov. 2018.

[5] **Byeong-Ju Han** and Jae-Young Sim, "Reflection removal using low-rank matrix completion," in *Proc. IEEE CVPR*, July 2017.

Domestic Conference Papers

[1] **Byeong-Ju Han** and Jae-Young Sim, "Performance improvement for nighttime haze removal via light source color correction," in *Proc. 대한전자공학회*, 2020

[2] Piljun Jeong, **Byeong-Ju Han**, and Jae-Young Sim, "Method for cloth detection of multiple people using deep learning," in *Proc. IPIU*, 2019

[3] **Byeong-Ju Han** and Jae-Young Sim, "Reflection removal algorithm using adaptive gradient reliability," in *Proc. IPIU*, 2018.

[4] **Byeong-Ju Han** and Jae-Young Sim, "Single image based shadow removal algorithm," in *Proc. IPIU*, 2015.

Research Projects

- **Diffusion and specular layer serpation from video signal** — **ETRI**
  Separate diffusion and specular layers. — *2019-2019*

- **Visual information restoration with extreme underwater environments** — **Samsung**
  Restore visual information with extreme underwater environments. — *2018-2021*
- **Information-coordination technique enabling augmented reality with mobile objects** — **IITP**
  Develop a solution for person re-identification minimizing invasion of privacy. — *2018-2022*
- **Development of 4D reconstruction and dynamic deformable action model based hyper realistic service technology** — **Giga KOREA**
  Develop an efficient representation for 4D mesh models. — *2017-2019*
- **Glass image processing for 360° large-scale 3D scene reconstruction** — **NRF**
  Solve issues on capturing visual data by cameras or lidar through glass. — *2017-2019*
- **Image segmentation using color and depth images** — **ETRI**
  Segment color images using depth images. — *2016-2017*
- **Multi-view video stitching with moving cameras with wide baselines** — **NRF**
  Stitch multi-view images with wide baselines. — *2016-2017*

Work Experience

- **Teaching Assistant** — **UNIST**
  Subject : AI programming II — *2019*
- **Teaching Assistant** — **UNIST**
  Subject : Signals and systems — *2018*
- **Teaching Assistant** — **UNIST**
  Subject : Probability and intro. to random process — *2017*
- **Teaching Assistant** — **UNIST**
  Subject : Signals and systems — *2015-2016*
- **Internship in Visual Information Processing Lab.** — **UNIST**
  Topics : edge detection, optical flow, hands tracking, shadow removal — *2013–2015*

Patents

- **Apparatus and method for image processing**
  Reflection removal methods
  Granted patent No. 10-2027043, 10-2199574

Technical Skills

- **Programming Languages:** Python, Pytorch, Matlab, TeX