# Dawit Mureja Argaw

Ph.D. Candidate, EE, KAIST
Address: Room 211, N1, 291 Daehak-ro, Daejeon 34141

https://dawitmureja.github.io
dawitmureja@kaist.ac.kr
+82-10-2090-1552


## Education

- **KAIST** — Daejeon, South Korea
  *Integrated M.S./Ph.D. in Electrical Engineering; supervised by Prof. In So Kweon* — *Sep 2019 - Present*
- **KAIST** — Daejeon, South Korea
  *M.S. in Electrical Engineering; supervised by Prof. In So Kweon* — *Sep 2018 - Aug 2019*
- **KAIST** — Daejeon, South Korea
  *B.S. in Electrical Engineering; GPA: 3.9/4.3 (Magna Cum Laude)* — *Sep 2014 - Jul 2018*

## Research Interests

My research interests lie in the general areas of computer vision and deep learning with a particular focus on image/video enhancement, motion estimation, video synthesis, compression and editing.

## Publications

International Conferences

- **Dawit Mureja Argaw**, Fabian Caba Heilbron, Markus Woodson, Joon-Young Lee, In So Kweon. The Anatomy of Video Editing: A Dataset and Benchmark Suite for AI-Assisted Video Editing. In *European Conference on Computer Vision* (**ECCV**), 2022.
- **Dawit Mureja Argaw**, In So Kweon. Long-term Video Frame Interpolation via Feature Propagation. In *IEEE Conference on Computer Vision and Pattern Recognition* (**CVPR**), 2022.
- **Dawit Mureja Argaw**, Junsik Kim, Francois Rameau, Chaoning Zhang, In So Kweon. Restoration of Video Frames from a Single Blurred Image with Motion Understanding. In *IEEE Conference on Computer Vision and Pattern Recognition Workshops* (**CVPRW**), 2021. (**Oral**)
- **Dawit Mureja Argaw**, Junsik Kim, Francois Rameau, In So Kweon. Motion-blurred Video Interpolation and Extrapolation. In *Association for the Advancement of Artificial Intelligence* (**AAAI**), 2021.
- **Dawit Mureja Argaw**, Junsik Kim, Francois Rameau, Jae Won Cho, In So Kweon. Optical Flow Estimation from a Single Motion-blurred Image. In *Association for the Advancement of Artificial Intelligence* (**AAAI**), 2021.
- Chaoning Zhang*, Philipp Benz*, **Dawit Mureja Argaw**, Seokju Lee, Junsik Kim, Francois Rameau, Jean Charles Bazin, In So Kweon. ResNet or DenseNet: Introducing Shortcuts to ResNet. In *IEEE Winter Conference on Applications of Computer Vision* (**WACV**), 2021.
- Chaoning Zhang, Francois Rameau, Junsik Kim, **Dawit Mureja Argaw**, Jean Charles Bazin, In So Kweon. DeePTZ: Deep Self-Calibration for PTZ cameras. In *IEEE Winter Conference on Applications of Computer Vision* (**WACV**), 2020.
- Chaoning Zhang, Francois Rameau, Seokju Lee, Junsik Kim, Philipp Benz, **Dawit Mureja Argaw**, Jean Charles Bazin, In So Kweon. Revisiting Residual Networks with Nonlinear Shortcuts. In *British Machine Vision Conference* (**BMVC**), 2019. (**Spotlight**)

International Journals

- **Dawit Mureja Argaw***, Malinda Vania*, Deukhee Lee. Automatic spine segmentation from CT images using convolutional neural network via redundant generation of class labels. In *Journal of Computational Design and Engineering* (**JCDE**), 2019. (*equal contribution)

## Research Experience

- **Adobe Research** — San Jose, CA (Remote)
  *Research Intern, Deep Learning Group* — *Aug 2021 - Nov 2021*
  - Research on learning film editing patterns from a movie scene anatomy towards the goal of achieving AI-assisted movie editing.
- **KAIST Robotics and Computer Vision Lab** — Daejeon, South Korea
  *Research Assistant* — *Sep 2018 - Present*
  - Research on various computer vision tasks such as Image/Video deblurring, Optical flow estimation and Video frame interpolation.
- **KAIST Artificial Intelligence and Machine Learning Lab** — Daejeon, South Korea
  *Undergraduate Research Participation* — *Jan 2017 - Dec 2017*
  - Researched on new mechanisms to enhance the performance of Memory Augmented Neural Networks (MANN) for one-shot learning and Visual Question Answering (VQA) tasks. Won an Excellent Research Award (1500$).
- **KIST Medical Navigation Laboratory** — Seoul, South Korea
  *Research Internship* — *Jul 2017 - Sep 2017*
  - Researched on segmenting the spine from Computed Tomography (CT) images using CNNs. Published a journal paper as a first co-author on Journal of Computational Design and Engineering (JCDE).

## Honors and Awards

- **Magna Cum Laude**, KAIST Electrical Engineering Department, Aug 2018
- **Excellent Research Award**, KAIST Undergraduate Research Participation (URP), Sep 2017
- **Dean's List**, KAIST School of Freshman, Feb 2015
- **KAIST Alumni Foundation Scholarship**, 2015
- **KAIST Scholarship**, Full scholarship for B.S., M.S. and Integrated M.S./Ph.D. programs, 2014-Present

## Skills

- **Prog. Lang.**: Python, Matlab, C, Java, LaTeX
- **Deep Learning**: Pytorch, Tensorflow, Keras.
- **Library**: Numpy, Scipy, Scikit-learn, OpenCV, Matplotlib.

## Academic Services

- **Reviewer**: CVPR 2021, ICCV 2021, CVPR 2022, ECCV 2022
- **Student Volunteer**: ICLR 2020, ICML 2020, NeurIPS 2020

## References

- **Prof. In So Kweon**
  Professor, School of Electrical Engineering, KAIST
  Relationship: M.S. and Ph.D. advisor
  Email: iskweon77@kaist.ac.kr
- **Dr. Fabian Caba Heilbron**
  Research Scientist, Adobe Research
  Relationship: Internship mentor and collaborator
  Email: caba@adobe.com
- **Dr. Joon-Young Lee**
  Senior Research Scientist, Adobe Research
  Relationship: Internship mentor and collaborator
  Email: jolee@adobe.com
- **Prof. Chang D. Yoo**
  Professor, School of Electrical Engineering, KAIST
  Relationship: Undergraduate research advisor
  Email: cd_yoo@kaist.ac.kr