

WONHO BAE

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Research enthusiast with a focus on computer vision, specifically for **self and weakly supervised** learning in **object recognition** framework. Obtained Bachelor's and Master's from UC Berkeley and UMass, Amherst, respectively. As of Sep 2020, started PhD program at the University of British Columbia under the supervision of Prof. Dougal Sutherland.

EDUCATION

University of British Columbia <i>PhD of Computer Science</i>	<i>Sep 2020 - present</i> <i>GPA: N/A</i>
University of Massachusetts, Amherst <i>Master of Computer Science</i>	<i>Sep 2018 - May 2020</i> <i>GPA: 3.78</i>
University of California, Berkeley <i>Bachelor of Statistics</i>	<i>Sep 2013 - Dec 2017</i> <i>GPA: 3.76</i>
Santa Monica College <i>Associate of Economics, member of Alpha Gamma Sigma</i>	<i>Sep 2011 - May 2013</i> <i>GPA: 3.95</i>

RESEARCH EXPERIENCE

Vision & Learning Lab at Seoul National University <i>Research Assistant</i> <ul style="list-style-type: none">- Supervisor: Prof. Gunhee Kim- Conducted a research on small object detection using Generative Adversarial Network in Faster R-CNN framework.- Conducted a research on object localization task under weakly-supervised learning setting using a class activation mapping method.	<i>Feb 2018 - Sep 2020</i>
Data Science for Common Good Fellowship at UMass, Amherst <i>Research Fellow</i> <ul style="list-style-type: none">- Supervisor: Dr. Brant Cheikes, Prof. Matthew Rattigan- Conducted a research on classifying wild animal images collected using camera traps in collaboration with The Nature Conservancy. Deployed a web-based open-source tool for ecologists.	<i>May 2019 - Aug 2019</i>
Renewable & Appropriate Energy Lab at UC Berkeley <i>Research Assistant</i> <ul style="list-style-type: none">- Supervisor: Prof. Daniel Kammen, Prof. Deborah Sunter- Participated in the Inclusive Green Growth project. Worked on keyword detection task using Natural Language Process techniques to replace synonyms and pronouns in the text. Currently writing a book to publish.	<i>Jan 2017 - Dec 2017</i>

PUBLICATIONS

- [1] **Wonho Bae***, Junhyug Noh*, Gunhee Kim, "Rethinking Class Activations Mapping for Weakly Supervised Object Localization," in European Conference on Computer Vision (**ECCV 2020**), online, Aug 2020.
- [2] **Wonho Bae***, Junhyug Noh*, Gunhee Kim, "Revisiting Class Activations Mapping for Learning from Imperfect Data," in Conference on Computer Vision and Pattern Recognition (**CVPRW 2020**), online, June 2020.
- [3] Junhyug Noh, Kyung Don Yoo, **Wonho Bae**, ..., YonSu Kim, Gunhee Kim, "Prediction of the Mortality Risk in Peritoneal Dialysis Patients using Machine Learning Models: A Nation-wide Prospective Cohort in Korea", in **Scientific Reports (2020)** by Nature Publishing Group.
- [4] Junhyug Noh, **Wonho Bae**, Wonhee Lee, Jinhwan Seo and Gunhee Kim, "Better to Follow, Follow to Be Better: Towards Precise Supervision of Feature Super-Resolution for Small Object Detection," in International Conference on Computer Vision (**ICCV 2019**), Seoul, Korea, Oct 2019.

WORK EXPERIENCE

Republic of Korea Army

Feb 2015 - Nov 2016

Signals Intelligence Analyst

- Served in the intelligence battalion of the Republic of Korea Army for 21 months as a signals intelligence analyst.

AWARD & SCHOLARSHIP

Learning from Imperfect Data (LID) Competition - 1st

June 2020

1st place in LID workshop at CVPR 2020

Data Science for Common Good Fellowship

May 2019 - Aug 2019

Research fellow in the Center of Data Science at UMass, Amherst

American Math Competitions

2011 - 2012

3rd place in 2011 and 1st place in 2012

TEACHING

Grader

Computer Vision (COMPSCI 670 - UMass, Amherst)

Fall 2019

OUTREACH/PRESENTATIONS

AI Summer Seminar at UMass, Amherst

Summer 2019

Hosted AI seminar at UMass during Summer of 2019. Discussed various topics related to AI including but not limited to computer vision, natural language process and planning.

Presentation for Inclusive Green Growth at Institute of Advanced Study, Germany

Aug 2018

Gave a talk about a data-driven approach for measuring Inclusive Green Growth of different countries and regions at Hanse-Wissenschaftskolleg Institute for Advanced Study in Germany.

TECHNICAL SKILLS

Programming Language: Python, C++, R, SQL

Deep Learning Tools: Pytorch, Tensorflow