# WONHO BAE

**Machine Learning and Computer Vision Researcher**

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## RESEARCH EXPERIENCE

### Research Assistant

**Vision & Learning Lab at Seoul National University**

February 2018 – September 2020 Seoul, South Korea

- Supervisor: Prof. Gunhee Kim
- Improved the detection performance of small objects using Generative Adversarial Network in Faster R-CNN framework, and revised class activation mapping for weakly-supervised object localization.

### Research Fellow

**Data Science for Common Good Fellowship at UMass**

May 2019 – August 2019 Amherst, Massachusetts

- Supervisor: Dr. Brant Cheikes, Prof. Matthew Rattigan
- Conducted a research on classifying wild animal camera trap images along with The Nature Conservancy. Deployed an open-source tool for ecologists.

### Research Assistant

**Renewable & Appropriate Energy Lab at UC Berkeley**

January 2017 – December 2017 Berkeley, California

- Supervisor: Prof. Daniel Kammen, Prof. Deborah Sunter
- Participated in the Inclusive Green Growth project. Worked on keyword detection task using NLP. Currently writing a book to publish.

## WORK EXPERIENCE

### Teaching Assistant

**University of British Columbia**

2021, 2022 Vancouver, BC

- Involved in grading and developing assignments for Computer Vision course.

### Signals Intelligence Analyst

**Republic of Korea Army**

February 2015 – November 2016 Chuncheon, South Korea

- Served in the intelligence battalion of the 2nd Corps of the Republic of Korea Army as a signals intelligence analyst.

## SELECTED PUBLICATIONS

[1] Jinhwan Seo, **Wonho Bae**, Danica Sutherland, Junhyug Noh, Daijin Kim "Object Discovery via Contrastive Learning for Weakly Supervised Object Detection", in **ECCV 2022**

[2] **Wonho Bae**, Junhyug Noh, Milad Jalali Asadabadi, Danica J. Sutherland, "One Weird Trick to Improve Your Semi-Weakly Supervised Semantic Segmentation Model", in **IJCAI 2022**.

[3] **Wonho Bae***, Junhyug Noh*, Gunhee Kim, "Rethinking Class Activations Mapping for Weakly Supervised Object Localization", in **ECCV 2020**, online.

[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 **ICCV 2019**, Seoul, Korea.

## EDUCATION

### PhD in Computer Science

**University of British Columbia**

Sep 2020 – Present GPA: 4.0

### Master's in Computer Science

**University of Massachusetts, Amherst**

Sep 2018 – May 2020 GPA: 3.78

### Bachelor's in Statistics

**University of California, Berkeley**

Sep 2013 – Dec 2017 GPA: 3.75

### Associate's in Economics

**Santa Monica C College**

Sep 2011 – May 2013 GPA: 3.95

## SKILLS

Python | R | PyTorch | Tensorflow

## COURSEWORKS

Computer Vision | NLP | Optimization | ML | Probabilistic Graphical Model | AI

## AWARDS

### Weak Supervision Competition - 1st

**CVPR 2020 Workshop**

June 2020

### Data Science Fellowship

**University of Massachusetts, Amherst**

May 2019 – August 2019

### Travel Grant

**Hanse-Wissenschaftskolleg Institute for Advanced Study, Germany**

August 2018

### Exemplar Soldier Award

**Republic of Korea Army**

September 2016

## PRESENTATIONS

- Gave a talk at ViewMagine (Online)
- Hosted AI Summer Seminar at UMass.
- Gave a talk at Institute of Advanced Study, Germany in August 2018.