

# Taehoon Kim

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## EDUCATION

**Ulsan National Institute of Science and Technology**, Ulsan, South Korea

B.S. in Computer Science & Engineering, Electrical Engineering

Mar 2011 – Aug 2015

## AWARDS

Best Paper Award, **DataCom 2015**

Dec 2015

Best Paper Award for Extracting Baseline Electricity Usage Using Gradient Tree Boosting

Finalist, **ISC Student Cluster Challenge**

Jun 2014

One of 11 international teams (including MIT, Tsinghua Univ) selected through the preliminary contest

3rd place, **Korea Whitehat Hacking Contest 2013**

Sep 2013

Awarded by the Minister of National Defense. Received an award of \$8,000

1st place, **Holyshield Hacking Contest 2013**

Nov 2013

Awarded by the President of Catholic University of Korea. Received an award of \$1,000.

Finalist, **Asia student Supercomputing Challenge 14**

Apr 2014

One of 16 teams among 82 international teams selected through the preliminary contest

Finalist, **Asia student Supercomputing Challenge 13**

Jan 2013

One of 10 teams among 43 international teams selected through the preliminary contest

Outstanding Graduate Award, **Ministry of Science, ICT and Future Planning**

Feb 2016

Chosen as one of all graduates, awarded by the Minister of Science, ICT and Future Planning

Outstanding Student Award 2014, UNIST

Dec 2014

Chosen as one team of all candidates from School of Electrical and Computer Engineering

Student Outstanding Award 2013, UNIST

Jan 2014

Chosen as one team of all candidates from School of Electrical and Computer Engineering

## PUBLICATIONS

### JOURNALS

- 1) T. Kim, D. Lee, J. Choi, A. Spurlock, A. Sim, A. Todd, K. Wu, **Predicting Baseline for Analysis of Electricity Pricing**, in *International Journal of Big Data Intelligence*, accepted for publication. Jun 2016.

### CONFERENCES

- 2) T. Kim and J. Choi, **Reading documents for bayesian Online Change Point Detection**, in *Empirical Methods on Natural Language Processing (EMNLP)*, Lisbon, Portugal, Sep 2015.
- 3) T. Kim, D. Lee, J. Choi, A. Spurlock, A. Sim, A. Todd, K. Wu, **Extracting Baseline Electricity Usage Using Gradient Tree Boosting**, in *2015 International Conference on Big Data Intelligence and Computing (DataCom)*, **Best Paper Award**, Chengdu, China, Dec 2015.

## EXPERIENCE

**Devsisters**, Seoul, South Korea

Research Engineer

Apr 2016 – Present

- Trained multiple agents for each characters with Double Q-learning, Dueling network, Prioritized replay memory and used prediction on dangerous and beneficial events as intrinsic rewards.
- Implemented Progressive Network to leverage transfer learning by training multiple networks that have connections from a pre-trained network that is trained with a character without any skills.
- Work as a substitute of mandatory military service

**Vingle**, Seoul, South Korea

Software Engineer

Oct 2015 – Apr 2016

- Build a prediction model for age and gender only with the user's action pattern in the services
- Build a personal push notification system and a statistical data visualization for push notification
- Worked as a substitute of mandatory military service

**Lawrence Berkeley National Laboratory**, California, USA

Undergraduate Research Student

Jul 2015 – Aug 2015

- Identify energy usage patterns in smart meter data, and relate the patterns to actions of households
- Propose baseline usage models for each household to cluster the households into different groups

**Probabilistic Artificial Intelligence Lab, UNIST**

Undergraduate Research Student

Sep 2014 – Sep 2015

- Improved Bayesian Online Change Point Detection by Reading Texts
- Food image recognition by combining deep convolutional features and shallow encoded features

**Moloco, California, USA***Student Web Developer*

Oct 2014 – Jan 2015

- Implement a maximum-likelihood estimation model of the number of users who will download an application
- Build a web visualization of models from a large-scale database with query optimization and a cache system

**Naver Labs, Seoul, South Korea***Software Development Intern*

Jul 2014 – Aug 2014

- Build a cloud comment hosting service using Django and Angular.js

**Mobile Smart Networking Laboratory, UNIST**

Undergraduate Research Student

Jan 2013 – Aug 2014

- Optimizing Mobile Video Streaming: From Context-aware Scheduling to Cloud-assisted Caching

**SCHOLARSHIPS**

Global Scholarship for Undergraduate Research Opportunities Program, UNIST

2015

Received \$3,000 as a financial support for research internship at Lawrence Berkeley National Laboratory

Academic Performance Scholarship, UNIST

2011 – 2015

National Science and Engineering Scholarship, Korean Student Aid Foundation

2013

**PROJECTS****BEGAN in TensorFlow, Generative model**

Apr 2017

Implemented BEGAN: Boundary Equilibrium Generative Adversarial Networks (Berthelot et, al. 2017) in TensorFlow

**BEGAN in PyTorch, Generative model**

Apr 2017

Implemented BEGAN: Boundary Equilibrium Generative Adversarial Networks (Berthelot et, al. 2017) in PyTorch

**DiscoGAN in TensorFlow, Generative model**

Mar 2017

Implemented Learning to Discover Cross-Domain Relations with Generative Adversarial Networks (Kim et, al. 2017) in TensorFlow

**Simulated+Unsupervised learning in TensorFlow, Generative model**

Jan 2017

Implemented Learning from Simulated and Unsupervised Images through Adversarial Training (Shrivastava et, al. 2016) in TensorFlow

**Pointer Network in TensorFlow, Sequence model**

Jan 2017

Implemented Learning to Discover Cross-Domain Relations with Generative Adversarial Networks (Kim et, al. 2015) in TensorFlow

**Pixel Recurrent Neural Networks, Generative model**

Jul 2016

Implemented Pixel Recurrent Neural Networks (Oord et, al. 2016) in TensorFlow

**Normalized Advantage Functions in TensorFlow, Reinforcement learning**

Jul 2016

Implemented Continuous Deep Q-Learning with Model-based Acceleration Learning (Gu et, al. 2016) in TensorFlow

**Dueling Network in TensorFlow, Reinforcement learning**

Jul 2016

Implemented Dueling Network Architectures for Deep Reinforcement Learning (Wang et, al. 2015) in TensorFlow

**Deep Q-network in TensorFlow, Reinforcement learning**

Jun 2016

Implemented Pointer Networks (Vinyals et, al. 2015) in TensorFlow

**A3C in TensorFlow, Reinforcement learning**

Jun 2016

Implemented Asynchronous Methods for Deep Reinforcement Learning (Mnih et, al. 2016) in TensorFlow

**Neural Variational Inference for Text Processing in TensorFlow, Question answering**

May 2016

Implemented Neural Variational Inference for Text Processing (Miao et, al. 2015) in TensorFlow

**Deep Visual Analogy-Making in TensorFlow, Visual analogy**

Feb 2016

Implemented Deep Visual Analogy-Making (Reed et, al. 2015) in TensorFlow

**Character-Aware Neural Language Models in TensorFlow, Language model**

Feb 2016

Implemented Character-Aware Neural Language Models (Kim et, al. 2016) in TensorFlow

**Teaching Machines to Read and Comprehend in TensorFlow, Question answering**

Jan 2016

Implemented Teaching Machines to Read and Comprehend (Hermann et, al. 2015) in TensorFlow

<b>DCGAN in TensorFlow</b> , <i>Generative model</i>	Jan 2016
Implemented Deep Convolutional Generative Adversarial Networks (Radford et, al. 2015) in TensorFlow	
<b>Neural Face</b> , <i>Generative model</i>	Jan 2016
A web application that generates Asian face images with DCGAN-tensorflow and convnet.js	
<b>Neural Turing Machine in TensorFlow</b> , <i>Algorithm learning</i>	Dec 2015
Implemented Neural Turing Machine (Graves et, al. 2014) in TensorFlow	
<b>End-To-End Memory Networks in TensorFlow</b> , <i>Question answering</i>	Dec 2015
Implemented End-To-End Memory Networks (Sukhbaatar et, al. 2015) in TensorFlow	
<b>Poet Neural</b> , <i>AI that generates Korean poetry</i>	Jun 2015
Build a generative model for Korean poetry using neural network for Character-level Language and a web demo	
<b>ReviewDuk</b> , <i>Korean sentiment analyzer</i>	Jan 2015
Build a Korean sentiment analyzer using logistic regression and Korean Movie Review dataset	
<b>Reverse Engineering</b> , <i>LINE, KakaoTalk, Between, Ndrive, and Korail</i>	Aug 2014
Reverse engineered 1) LINE, 2) KakaoTalk, 3) Between, 4) Ndrive, and 5) Korail and wrote python libraries	

## LEADERSHIP

HeXA, Computer Security Club, UNIST	
President, Lead multiple super computing and hacking competitions	Aug 2012 – Mar 2013