

# Changho Shin

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1210 W Dayton St, Madison, WI 53706

**INTERESTS** *Machine Learning, Data Science*

**EDUCATION** **University of Wisconsin-Madison** Sep. 2020 –  
• Ph.D. Student in School of Computer, Data & Information Sciences  
• Advisor: Professor Frederic Sala  
• Pursuing additional MS degree in Math

**Seoul National University** Mar. 2015 – Feb. 2017  
• M.S. in Department of Transdisciplinary Studies  
• Thesis: Application of Traditional ML and DNN Techniques on Energy Disaggregation with 10 Hz AMI Data  
• Advisor: Professor Wonjong Rhee, IEEE Fellow

**Seoul National University** Mar. 2011 – Feb. 2015  
• B.A. in Psychology  
• B.S. in Computer Science and Engineering  
• Graduated with honors (Cum Laude)

- PUBLICATIONS**
- [1] Joon Suk Huh\*, **Changho Shin\***, Elina Choi, “Pool-Search-Demonstrate: Improving Data-wrangling LLMs via better in-context examples”, *NeurIPS 2023 Workshop: Table Representation Learning (TRL)* 2023.
  - [2] Dyah Adila\*, **Changho Shin\***, Linrong Cai, Frederic Sala, “Zero-Shot Robustification of Zero-Shot Models With Auxiliary Foundation Models”, *NeurIPS 2023 Workshop: Robustness of Few-shot and Zero-shot Learning in Large Foundation Models (R0-FoMo)* 2023.
  - [3] **Changho Shin\***, Tzu-heng Huang\*, Sui Jiet Tay, Dyah Adila, Frederic Sala, “Multimodal Data Curation via Object Detection and Filter Ensembles”, ICCV 2023 Datacomp Workshop (Winning solution in datacomp competition filtering track (small)).
  - [4] **Changho Shin**, Sonia Crompt, Dyah Adila, Frederic Sala, “Mitigating Source Bias for Fairer Weak Supervision”, *NeurIPS* 2023.
  - [5] **Changho Shin**, Alice Schoenauer-Sebag, “Can we get smarter than majority vote? Efficient use of individual rater’s labels for content moderation”, *NeurIPS 2022 Workshop: Efficient Natural Language and Speech Processing (ENLSP)* 2022.
  - [6] **Changho Shin**, Winfred Li, Harit Vishwakarma, Nicholas Roberts, Frederic Sala “Universalizing Weak Supervision”, *International Conference on Learning Representations (ICLR)* 2022.
  - [7] **Changho Shin**, Eunjung Lee, Jeongyun Han, Jaeryun Yim, Hyoseop Lee, Wonjong Rhee, “The ENERTALK Dataset, 15 Hz Electricity Consumption Data from 22 Houses in Korea”, *Nature Scientific Data*, 2019 (Impact Factor = 5.929).
  - [8] **Changho Shin**, Seungeun Rho, Hyoseop Lee, Wonjong Rhee, “Data Requirements for Applying Machine Learning to Energy Disaggregation”, *Energies*, May 2019 (Impact Factor = 2.707).
  - [9] **Changho Shin**, Sunghwan Joo, Jaeryun Yim, Hyoseop Lee, Taesup Moon, Wonjong Rhee, “Subtask Gated Networks for Non-Intrusive Load Monitoring”, *AAAI Conference on Artificial Intelligence* 2019 (Acceptance Rate = 16.2%).

<b>JOB EXPERIENCE</b>	<b>Twitter</b> , San Francisco, USA <i>ML Engineer Intern</i> (Health team) • Mentor: Alice Schoenauer Sebag • Manager: Milind Ganjoo Jun. 2022 – Aug. 2022
	<b>Encored Technologies</b> , Seoul, Korea <i>Data Scientist</i> • Advisor: Dr. Hyoseop Lee Jan. 2018 – Jul. 2020
	<b>Korea Institute for Defense Analyses</b> , Seoul, Korea <i>Researcher</i> Jan. 2017 – Dec. 2017
<b>TEACHING EXPERIENCE</b>	<b>University of Wisconsin-Madison</b> • Teaching assistant for CS 839 (Foundation Models) Fall 2023 • Teaching assistant for CS 300 (Programming II) Fall 2022, Spring 2023 • Teaching assistant for CS 760 (Machine Learning) Fall 2021, Spring 2022 • Teaching assistant for CS 320 (Data Programming II) Spring 2021 • Teaching assistant for CS 220 (Data Programming I) Fall 2020
	<b>CS Departmental Scholarship</b> 2020 University of Wisconsin-Madison
<b>HONORS</b>	<b>1st Creative National Defense Conference - 2nd Place</b> 2016 Ministry of National Defense • Topic: Cooperative unmanned aircraft system with reinforcement learning
	<b>Merit-based Scholarship</b> 2015 Seoul National University
<b>Graduate Coursework</b>	<ul style="list-style-type: none"> <li>• M2680.001300 Machine Learning for Information Studies @ SNU</li> <li>• M2680.001400 Social Computing @ SNU</li> <li>• 493.613 Mathematics for Intelligent Systems (Numerical Linear Algebra) @ SNU</li> <li>• 493.701 Learning and Applications of Deep Neural Networks @ SNU</li> <li>• M0000.005400 Convex Optimization @ SNU</li> <li>• M0000.005400 Neural Networks @ SNU</li> <li>• CS537 Introduction to Operating Systems @ UW</li> <li>• CS639.004 Introduction to Computational Learning Theory @ UW</li> <li>• CS726 Nonlinear Optimization 1</li> <li>• CS744 Big Data Systems @ UW</li> <li>• CS761 Mathematical Foundations of Machine Learning @ UW</li> <li>• CS784 Foundations of Data Management @ UW</li> <li>• CS787 Advanced Algorithms @ UW</li> <li>• CS839 Probability and Learning in High Dimension @ UW</li> <li>• CS880 Advanced Topics in Learning Theory @ UW</li> <li>• Math521 Analysis I @ UW</li> <li>• Math522 Analysis II @ UW</li> <li>• Math551 Elementary Topology @ UW</li> <li>• Math629 Introduction to Measure and Integration @ UW</li> <li>• Math621 Analysis III (Analysis on Manifolds) @ UW</li> <li>• Math721 A First Course in Real Analysis @ UW</li> <li>• Math733 Theory of Probability I @ UW</li> <li>• Math761 Differentiable Manifolds @ UW</li> <li>• Math833 Modern Discrete Probability @ UW</li> <li>• Math888 Randomized Linear Algebra @ UW</li> <li>• Stat992 Optimal Transport and Applications to Machine Learning @ UW</li> </ul>

**TECHNICAL  
SKILLS****Machine Learning / Deep Learning / Data Science**

PyTorch, TensorFlow, Keras, scikit-learn, NumPy, Pandas, SciPy

**DBMS**

MySQL, MongoDB, PySpark

**Research & Development Tools**

Jupyter, PyCharm, Docker, GitHub, CircleCI, Shell, Amazon Web Services

**Programming Languages**

Python, R, MATLAB, Java, Go, C,  $\text{\LaTeX}$