

# Eugine (Caroline) Shin

713 Dreese Laboratories, 2015 Neil Avenue, Columbus, OH

Email : shin.768@buckeyemail.osu.edu

<https://carolineugine.github.io>

## RESEARCH INTEREST

---

Federated Learning, Machine Learning, Fairness, Optimization

## EDUCATION

---

- **The Ohio State University** Columbus, OH  
Ph.D. Student in Computer Science & Engineering (Advisor: Aylin Yener) Aug. 2019- Present
- **Chung-Ang University** Seoul, South Korea  
Bachelor of Science in Electrical & Electronics Engineering Mar. 2015 - Feb. 2019
- **University of Hawaii at Manoa** Honolulu, HI  
Exchange Student Aug. 2016 - May 2017

## PUBLICATIONS

---

- **Proportional Fair Clustered Federated Learning**  
M.Nafea, **E.Shin**, A.Yener  
IEEE International Symposium on Information Theory (ISIT) 2022, Oulu, Finland [Paper]
- **Source-node-independent 2-by-2 linear precoder for amplify-and-forward two-way-relay with two antennas**  
**E.Shin**, J.Joung, J.Choi  
International Conference on Electronics, Information, and Communication(ICEIC) 2018, Honolulu, HI
- **Energy Harversting and Transmission Time Allocation Method for Wireless Sensors**  
**E.Shin**, S.Choo, J.Joung, J.Choi  
Korean Institute of Communications and Information Sciences(KICS) 2017 Fall Conference, Daegu, South Korea

## ACADEMIC EXPERIENCE

---

- **Research Assistant** Sep.2017 - Jan.2018  
Wireless Systems Laboratory, Chung-Ang University (Advisor: Jingon Joung)
  - **Participating in Projects:** Studied and researched in wireless communications, including energy harvesting and designing linear precoders.
- **Research Assistant** Nov. 2016 - May. 2017  
University of Hawaii at Manoa (Advisor: Narayana Santhanam)
  - **Machine Learning Projects:** Participated in projects on machine learning with giving data to a graduate student. I learned feature programs and various models related to machine learning, such as coding for random forest models.

## TEACHING ASSISTANT

---

- **OSU CSE-5243 Introduction to Data Mining** Spring 2021, Autumn 2022
  - Grading homeworks, projects, data competitions and holding office hours related to course
- **OSU CSE-1222 Introduction to Computer Programming in C++ for Engineers** Autumn 2021, Spring 2022
  - Holding Lab sessions and holding office hours related to course
  - Grading quizzes, midterm exams and final exam

## ACADEMIC BACKGROUND

---

### **Mathematics**

Linear Algebra, Calculus I/II, Advanced Engineering Mathematics, Electrical Engineering Mathematics, Numerical Analysis, Discrete Math for Engineers, Probability and Statistics, Machine Learning and Statistical Pattern Recognition, Algorithms, Real Analysis I/II, Introduction of Static and Dynamic Optimization, Foundations of Differentially Private Data Analysis, Nonconvex Optimization for Machine Learning

### **Computer Engineering & Communication**

Computer Programming, Data Structures, Microcomputer Systems, Computer Architecture, Operating Systems, Signal and Systems Analysis, Communication Engineering, Mobile Communication, Introduction to Data Mining, Advanced Operating Systems, Programming Languages

## HONORS & AWARDS

---

- Dean's List, University of Hawaii at Manoa (Fall 2016 & Spring 2017)
- Practical Education Program Certificate with Scholarship (Aug. 2018)
- Scholarship for Volunteer of Engineering/ICT Engineering Department (Mar. 2018 & Sep. 2018)
- College of ICT Engineering Lucid Pole Portfolio Award for Excellence (Nov. 2017)

## SKILLS SUMMARY

---

- **Languages:** Python, C/C++, Java, Assembly (ARM, x86-64)
- **Tools:** MATLAB, PyTorch, Office

## LANGUAGE PROFICIENCY

---

Fluent in **English**, Native in **Korean**