

Soo Min Kwon

CONTACT INFORMATION	Phone: (201) 421-8064 Email: smk330@scarletmail.rutgers.edu Google Scholar: scholar.google.com/soominkwon	Github: github.com/soominkwon Website: soominkwon.github.io
RESEARCH INTERESTS	Convex & non-convex optimization, multi-dimensional (tensor) data analysis, differential privacy, distributed learning	
EDUCATION	Rutgers University M.S., Electrical and Computer Engineering • Thesis: Optimization Problems with Low-Dimensional Tensor Structure • Advisor: Prof. Anand D. Sarwate	New Brunswick, NJ Sept. 2020 – May 2022 (Expected)
	Rutgers University B.S., Electrical and Computer Engineering • Thesis: Learning Predictors from Multidimensional Data with Tensor Factorizations • Advisor: Prof. Anand D. Sarwate	New Brunswick, NJ Sept. 2016 – May 2020
RELEVANT COURSEWORK	Graduate: Optimization Methods for Machine Learning, Convex Optimization, Detection & Estimation Theory, Stochastic Signals & Systems, Machine Vision, Information Theory Undergraduate: Linear Algebra, Machine Learning for Engineers, Linear Systems & Signals, Digital Signals Processing, Linear Optimization	
ACADEMIC EXPERIENCE	Teaching Assistant Rutgers University • Currently a Teaching Assistant for Introduction to Computers for Engineers (MATLAB) with approximately 500 students • Served as a Teaching Assistant for Digital Signal Processing for Prof. Waheed Bajwa with approximately 100 students • Served as a Teaching Assistant for Linear Systems and Signals with approximately 50 students	Jan. 2020 – Present New Brunswick, NJ
	Graduate Research Assistant Rutgers University • Currently conducting research in exploiting low-dimensional tensor structures on different types of optimization problems • Previously researched in distributed differential privacy – a private framework in which multiple sites can collaborate to learn under sensitive data	May 2020 – Present New Brunswick, NJ
	Research Intern Wireless Information Network Laboratory • Performed data collection and pre-processed millimeter-wave sensor data for Convolutional Neural Networks to infer the type of activity performed • Results were presented in the WINLAB Symposium, MIT Undergraduate Research Conference, IEEE DySPAN 2019, and ECE Research Day 2019 • Lead author to publication for demonstration at an IEEE conference	May 2019 – Sept. 2019 North Brunswick, NJ

PUBLICATIONS	<ul style="list-style-type: none"> * S. Kwon, X. Yang, A. D. Sarwate. “Low-Rank Phase Retrieval with Structured Tensor Models.” Submitted to International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2022. * D. K. Saha, V. D. Calhoun, Y. Du, Z. Fu, R. Panta, S. Kwon, A. D. Sarwate, S. M. Plis. “Privacy-preserving quality control of neuroimaging datasets in federated environments”. Submitted to Human Brain Mapping, 2021. * S. Kwon, A. D. Sarwate. “Learning Predictors from Multidimensional Data with Tensor Factorizations”. In Rutgers University Aresty Undergraduate Research Journal, 2021. * S. Kwon, S. Yang, J. Liu, X. Yang, W. Saleh, S. Patel, C. Mathews, Y. Chen. “Demo: Hands-Free Human Activity Recognition Using Millimeter-Wave Sensors”. In IEEE International Symposium on Dynamic Spectrum Access Networks, 2019.
POSTER PRESENTATIONS	<ul style="list-style-type: none"> * D. K. Saha, V. D. Calhoun, Y. Du, Z. Fu, R. Panta, S. Kwon, A. D. Sarwate, S. M. Plis. “Visualizing Neuroimaging Data Located at Different Sites with Privacy Guarantees”. Presented in Organization for Human Brain Mapping, 2021. * S. Kwon, A. D. Sarwate. “Learning Predictors from Multidimensional Data with Tensor Factorizations”. Presented in J.J. Slade Honors Research Presentation, 2020. * S. Kwon, A. D. Sarwate. “Tensor Regression with Applications in Neuroimaging Data Analysis”. Presented in ECE Research Day, 2019. * S. Kwon, S. Yang, X. Yang. “Hands-Free Human Activity Recognition Using Millimeter-Wave Sensors”. Presented in MIT Undergraduate Research Technology Conference, 2019. * S. Kwon, S. Yang, J. Liu, X. Yang, W. Saleh, S. Patel, C. Mathews, Y. Chen. “mmWave-based Human Activity Recognition”. Presented in IEEE International Symposium on Dynamic Spectrum Access Networks, 2019.
WORK EXPERIENCE	<p>Data Science Intern May 2020 – Aug. 2020</p> <p>WellCare Health Plans Remote</p> <ul style="list-style-type: none"> • Automated the process of detecting expedition phrases in healthcare forms using Restricted Boltzmann Machines in Tensorflow • Designed and optimized several machine learning algorithms (Support Vector Machines, Logistic Regression, XGBoost) for statistical inference on diseases given pharmacy data
AWARDS	<ul style="list-style-type: none"> * Rutgers ECE Outstanding Teaching Assistant Award 2021 * Rutgers ECE Departmental Leadership & Service Award 2020 * Rutgers WINLAB GA/TA Grant 2020 – 2020 * James J. Slade Honors Scholar 2019 – 2020 * Rutgers University Dean’s List 2018 – 2020
TECHNICAL SKILLS	<ul style="list-style-type: none"> * Programming Languages: Python, MATLAB, SQL, C++ * Libraries: Tensorflow, Scikit-learn, NumPy, SciPy, Pandas, Matplotlib * Software: Git, Visual Studio, Tableau, Jupyter Notebook, Microsoft Office, L^AT_EX