Kristina Marie Sorensen Wheatman

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EDUCATION
- **PhD in Electrical Engineering**, <u>Pennsylvania State University</u>   Jan 2018 – Present
  Dissertation: *"Optimal Resource Allocation in Wireless Networks for Multimedia Applications"*
- **MEng in Acoustics**, <u>Pennsylvania State University</u>   Aug 2014 – Aug 2017
  College of Engineering Fellow
- **BSc in Applied Mathematics, Physics Minor,** <u>Utah State University</u>   Aug 2009 – Dec 2012
  University & Departmental Honors

RESEARCH EXPERIENCE
- **Graduate Research Assistant, Electrical Engineering and Computer Science, PSU**
  Supervisors: Dr. Thomas F. La Porta & Dr. Mark P. Mahon   Jan 2018 – Present
  - Optimizing energy efficiency & quality of experience for video streaming in 5G and LTE networks.
  - Convex optimization for resource allocation pertaining to crowd-sourced image processing.
  - Convergence and stability analysis using Markov chain models and eigenvalues of transition matrices.
- **PhD Research Intern, Software & Data Systems Research Lab, Nokia Bell Labs**
  Supervisor: Dr. Itai Segall   June 2020 – Sept 2020
  - RESH development, a new interpreted programming language for autonomous multi-robot orchestration.
  - Mixed-Integer Nonlinear Programming (MINLP) for multi-robot multi-task assignment optimization.
- **College of Engineering Fellow, Acoustics, PSU**
  Supervisor: Dr. Michelle C. Vigeant   Aug 2014 – Dec 2017
  - Acoustics coursework and in-depth research in wireless communications, broadband signal processing, computational methods, wave propagation, noise control, vibration analysis, and underwater acoustics.
- **Undergraduate Research Assistant in Acoustics, Physics, USU**
  Supervisors: Dr. J. R. Dennison, Dr. Timothy E. Doyle, & Dr. Lee H. Pearson   Jan 2011 – Dec 2012
  - Linear algebra transformations and multivariate statistical analyses of biomedical ultrasonic data.
  - DSP of HF pulsed-electro-acoustic (PEA) measurements to investigate internal charge distributions.
- **NSF Research Experience for Undergraduates (REU), Physics, BYU**
  Supervisor: Dr. Timothy W. Leishman   June 2011 – Nov 2011
  - Multi-dimensional acoustic directivity and DSP of a rotating grand piano for architectural applications.

AWARDS
- <u>Nokia Bell Labs</u>: 2020 Summer Research Award for Outstanding Innovation, Aug 2020
- <u>Penn State University</u>: 2014 College of Engineering Graduate Research Fellowship, Aug 2014 – Dec 2017
- <u>Utah State University</u>: Presidential Undergrad Scholarship, Science Research Grant, Cannon STEM Award

PUBLICATIONS
- **Wheatman K.S.**, et. al. (2022) "Multi-User Competitive Energy-Aware and QoE-Aware Video Streaming on Mobile Devices" (Pre-submission).
- **Wheatman K.S..**, et. al. (2022) "Optimal Resource Allocation for Crowd-Sourced Image Processing" IEEE Transactions on Mobile Computing (In review).
- Mehmeti F. Felemban N., Lu Z., **Wheatman K.S.**, et.al. (2021). "Quality of Information in Gathering Information via Video Analytics for Military Networks," IEEE Comms. Magazine, Vol. 59, No. 2. (<u>link</u>)
- **Wheatman K.S.**, et. al. (2020) "Multi-User Competitive Energy-Aware and QoE-Aware Video Streaming on Mobile Devices," *Proc. of Q2SWinet 2020*, Alicante, Spain. 16-20 November. (<u>link</u>)
- **Wheatman K.S.**, et. al. (2020) "Optimal Resource Allocation for Crowd-Sourced Image Processing," Proc. of IEEE SECON 2020, Como, Italy. 22-26 June. (<u>link</u>)
- **Sorensen K.M.**, et.al. (2016). "Study of the Perception of Warmth in Concert Halls and Correlation with Room Acoustics Metrics," in *Proc. of JASA,* Vol. 140, No. 4.
- **Sorensen K.M.**, et.al. (2012). "High-Frequency Pulsed-Electro-Acoustic (PEA) Measurements for Mapping Charge Distribution," in *Proc. of Four Corners APS,* Vol. 57. No. 11.
- **Sorensen K.M.**, et.al. (2012). "Histological Analysis of Biological Tissues using High-Frequency Ultrasound."
- Doyle T.E., Factor R.E., Ellefson C.L., **Sorensen K.M.**, et.al. (2011). "High-Frequency Ultrasound for Intraoperative Margin Assessments in Breast Conservation Surgery." BMC Cancer 11-444. (<u>link</u>)
- **Sorensen K.M.**, et.al. (2011). "Ultrasonic Analysis of Breast Tissue for Pathology Classification."
- **Sorensen K.M.**, (2011). "On the Directivity of Musical Instruments: Effects on Room Acoustics Calculations."
- Eyring N., Leishman T., **Sorensen K. M.**, et. al. (2011). "Methods for Automating Multichannel Directivity Measurements of Musical Instruments in an Anechoic Chamber," in *Proc. of JASA,* Vol. 130, No. 4.

COMPUTER PROGRAMMING
- Python, MATLAB, C++, Gurobi, CPLEX, COIN-OR, LabVIEW, SAS, Mathcad, LTspice, Bash