CONNOR HASHEMI

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EDUCATION

University of Minnesota, Minneapolis — Expected August 2023
Doctor of Philosophy, Electrical Engineering — Cumulative GPA: 3.875/4.0

University of Minnesota, Minneapolis — April 2020
Master of Science, Electrical Engineering — Cumulative GPA: 3.857/4.0

University of Minnesota, Minneapolis — May 2018
Bachelor of Science, Electrical Engineering — Cumulative GPA: 3.923/4.0

RELEVANT SKILLS

Coursework machine learning, computer vision, Fourier optics, information theory, optimization theory
Software MATLAB, Python, Java, C++, PyTorch, Agisoft Photoscan, Blender

RESEARCH

REVEAL Project for Passive Non-Line-of-Sight Imaging — Aug 2016 - Present
Electrical and Computer Engineering Lab — *University of Minnesota*

· Collaborating on a DARPA-funded project to exploit scattered light to image around corners at an unknown scene
· Designing new data fusion frameworks across electromagnetic spectra to increase information gain
· Designing reconstruction algorithms that are robust in very noisy scenarios
· Utilizing photogrammetry techniques for calibration and material-reflectance extraction

Determining a Hidden Laptop Screen using Light Scattered off a Face — Sep 2017 - Aug 2018
Electrical and Computer Engineering Lab — *University of Minnesota*

· Investigated using machine learning to exploit scattered light off a person's face to recover hidden text on a laptop screen
· Utilized dictionary learning and regularization on supervised high-resolution image datasets to reconstruct the hidden information

WORK EXPERIENCE

Systems Engineer Intern — May 2020 - Aug 2020
Black River Systems Inc — *Lakeville, Minnesota*

· Collected and analyzed I/Q data captured from a software defined radio (SDR) in urban settings
· Researched different band-agnostic feature extraction methods to reduce 32,000 complex I/Q samples to 26 features
· Implemented Affinity Propagation clustering to perform unsupervised learning and separate signals of interest
· Applied the band-agnostic features developed to aid a ResNet CNN architecture in performing supervised learning for automatic modulation classification (AMC)

Applied Scientist Intern — May 2021 - January 2022
Amazon.com — *Seattle, Washington*

· Utilizing computer vision to automatically analyze and classify counterfeit documents
· Implementing self-supervised contrastive learning for robust representation learning of document classes
· Collecting and processing new datasets from scratch for training and testing
· Performing few-shot learning with k-nearest neighbor (KNN) analysis
· Implemented a developed model into production to help users search for similar documents in a repository
· First-authored an internal conference workshop submission detailing the model in production

TEACHING EXPERIENCE

TA for EE 5621 Physical Optics — Spring 2020
TA for EE 3015 Signals and Systems — Fall 2021
TA for EE 3011 Circuits Laboratory — Fall 2022

LEADERSHIP

Science for All Leader Sep 2020 - Jan 2021

· Perform and lead physics demonstrations to middle-school students around Minneapolis to foster interest in STEM careers

Student Leader in Bridges International May 2017 - January 2022

· Coordinating alongside other leaders to develop a community for international students

Leader at English Club Sep 2018 - Present

· Organizing biweekly meetings to connect international and American students with 40-50 students each meeting

IEEE UMN Student Branch President May 2016 - May 2017

· Scheduled information sessions, presided over weekly meetings, and led the officer team

PRESENTATIONS/PUBLICATIONS

Connor Hashemi and James R. Leger. "Exploiting the Visible Spectrum to Look Around Corners." Computational Optical Sensing and Imaging. Optical Society of America, 2020.

Connor Hashemi and James R. Leger. "Exploiting Light Field Spectra for Passive NLoS Imaging." Poster presentation at IMA Workshop on Computational Imaging. Institute for Mathematics and its Applications, 2019.

Connor Hashemi, Yang Liu, Yifei Sun, and Vincent Gao. "Extracting Robust Representations of Invoice Images for Automated Forgery Detection." Amazon Machine Learning Conference (AMLC) Computer Vision in Customer Trust Workshop.

Di Lin, **Connor Hashemi**, and James R. Leger. "Passive Non-Line-of-Sight Imaging using Plenoptic Information ." Journal of the Optical Society of America A. Optical Society of America, 2020.

Di Lin, **Connor Hashemi**, and James R. Leger. "Occlusion-Aided Passive Non-Line-of-Sight Imaging using Plenoptic Information." Computational Optical Sensing and Imaging. Optical Society of America, 2020.

Di Lin, **Connor Hashemi**, and James R. Leger. "Non-Line-of-Sight Imaging using Plenoptic Information." Computational Optical Sensing and Imaging. Optical Society of America, 2019.

ACADEMIC AWARDS

Naval Horizons Challenge Winner	Jan 2021
Summa Cum Laude	May 2018
CSE Fellowship	Feb 2018
Robert E Rice Scholarship	May 2014