Charles Dunn

cdunnemail@gmail.com – 19 Winter St #3, Somerville, MA 02144 – 224-628-0603

Work and Research Experience

MIT Lincoln Laboratory ISR & Tactical Systems Division, Associate Technical Staff – 2012-present – **Active US Security Clearances**

Developing and implementing algorithms for a unique radar system including creating analysis tools, functionalizing a full algorithm simulator, and modifying complex existing processing. Solved for the PDF of a highly non-linear combination of noise distributions and verified the result using real data. Independently conducted large data set testing and analysis that led to novel algorithms and a new understanding of a high priority problem. Independently identified mathematical inconsistencies with the existing algorithm, which led to a dramatic performance improvement. Presented results to coworkers, the larger program community, and sponsors.

Leveraged feature distribution divergence to dramatically accelerate feature selection and performance analysis of machine learning classification including empirically determining the linear indices of all diagonal elements of a variable-dimensional data hypercube.

Quickly employed open source code and developed a ray-tracing visible light simulation for a vulnerability study.

Johns Hopkins Applied Physics Laboratory Global Engagement Department, GPS Signal Processing Summer Intern – 2011

Johns Hopkins Applied Physics Laboratory Global Engagement Department, GPS Circuit Design Summer Intern – 2010

Stanford University Electrical Engineering VLF Group, Satellite Design Engineer – 2010

Hitachi Japan, Nuclear Plant Design Department, Radiation Protection Summer Intern – 2009

Stanford University Electrical Engineering VLF Group, Ground Station Design Summer Researcher – 2010

Education

Stanford University MS in Electrical Engineering 2012 – Communication Systems Concentration

Project Winners – Efficient Compression Techniques for Stereoscopic Image Pairs – EE398 Image and Video Compression

Stanford University BS in Electrical Engineering 2011 – Circuits and Devices Concentration

Honorable Mention – Karel Contest Derivative Karel – CS106A Programming Methodology

MIT Advanced Study Program 2015

Honorable Mention – Cipher Breaking Using Markov Chain Monte Carlo – 6.437 Inference and Information

4.00/4.00	800/800	3.80/4.00	35/36
Graduate GPA	GRE Quantitative	Undergraduate GPA	ACT Composite

Interest (↑) and Experience (←)

Image Processing	Information Theory	Optimization	Quantified Self
Signal Processing	Data Compression	Cryptography	Design of Experiments
MATLAB	Machine Learning	C/C++	Nuclear Power
Japanese	Linux	VLSI Layout	Quantum Mechanics

Personal Interests

0	1	2	3	4	5	6	7	8	20
Coffees consumed per day	Wool hat knitted	Internet published 50 word stories	200 mile Ragnar relay races	Minute 52 second PR mile	Months lived in Japan	YouTube videos with >4k views	Ball cascade juggling pattern	States camped in	Miles per day on the VT Long Trail