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

800/800

GRE Quantitative

4.00/4.00

Graduate GPA

3.80/4.00

Undergraduate GPA

35/36

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

Internet published 50 word stories

2

Wool hat knitted

1

Coffees consumed   
per day

0

Minute  
52 second  
PR mile

4

200 mile Ragnar relay races

3

Months   
lived in   
Japan

5

YouTube videos with >4k views

6

Ball cascade

juggling  
pattern

7

Miles per day on the VT Long Trail

20

States

camped

in

8

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