

# Ryan David Kappedal

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## EDUCATION

### UNIVERSITY OF WASHINGTON

PHD IN STATISTICS

CONCENTRATION IN MACHINE

LEARNING

September 2011 - August 2014 |

Seattle, WA

### AIR FORCE INSTITUTE OF TECHNOLOGY

MS IN OPERATIONS RESEARCH

CONCENTRATIONS IN OPTIMIZATION

AND STATISTICS

September 2006 - April 2008 | Dayton,

OH

### UNITED STATES AIR FORCE ACADEMY

BS IN OPERATIONS RESEARCH

MINORS IN MATHEMATICS AND

CHINESE

June 1995 - June 1999 | Colorado

Springs, CO

## COURSEWORK

### PHD

Machine Learning

Regression Analysis

Stochastic Processes

Statistical Theory

Statistical Consulting

### MASTER'S

Integer Programming

Design of Experiments

Convex Optimization

Discrete Event Simulation

Heuristic Search

Multi-criteria Optimization

### UNDERGRADUATE

Engineering Management

Astrodynamics

Electrical Engineering

Mechanical Engineering

Statistics and Probability

Operations Research

## EXPERIENCE

### AIR FORCE INSTITUTE OF TECHNOLOGY | ASSISTANT PROFESSOR

September 2014 – present | Dayton, OH

- Teaches graduate-level statistics and machine learning
- Supervises research spanning neuroscience, genetics, and astronomy

### UNIVERSITY OF CALIFORNIA | LECTURER

June 2016 – present | Berkeley, CA

- Teaches graduate-level statistics and machine learning

### LAWRENCE LIVERMORE NATIONAL LABORATORY | VISITING SCIENTIST

June 2016 – August 2016 | Livermore, CA

- Conducted research on seismic anomalies to form predictive models.

### SCHMIDT FOUNDATION DATA SCIENCE FOR SOCIAL GOOD FELLOWSHIP | FELLOW

May 2015 – August 2015 | Chicago, IL

- Applied Data Science tools to solve modern social problems.

### HEADQUARTERS UNITED STATES AIR FORCE | SENIOR ANALYST

April 2008 – August 2011 | Washington, DC

- Provided quantitative analysis to support the Chief of Staff's decision-making
- Examined cost and resource trends providing predictive insight to budgeting

### UNITED STATES FORCES, IRAQ | SECURITY ANALYST

July 2009 – January 2010 | Baghdad, Iraq

- Analyzed criminal and insurgent activity to provide recommendations to the Commander of United States Forces, Iraq
- Conducted predictive modeling of threats throughout Iraq

### AIR FORCE OPERATIONAL TEST AND EVALUATION CENTER | TEST DIRECTOR

August 2003 – August 2006 | Albuquerque, NM

- Managed large-scale field tests of advanced technologies.
- Supervised test reports and systems analysis to support defense acquisitions valued at over \$1 Billion.

### 386TH AIR EXPEDITIONARY WING | CHIEF OF INTELLIGENCE

September 2005 – January 2006 | Ali Al Salem AB, Kuwait

- Served in the Middle East as the Senior Intelligence officer for a deployed Wing
- Oversaw production intelligence products for ground and air units

### 5TH AIR FORCE | INTELLIGENCE FLIGHT COMMANDER

August 2000 – August 2003 | Tokyo, Japan

- Served as analyst, flight commander, and senior officer of the intelligence watch.
- Organized tactics analysis conferences with the Japanese self-defense forces

### UNITED STATES CENTRAL COMMAND | INTELLIGENCE LIAISON OFFICER

April 2002 – November 2002 | Tampa, FL

- Served as intelligence liaison officer to support current operations planning.

## SKILLS

### NON-TECHNICAL

Japanese  
Chinese  
Leadership  
Strategy  
Organizational Planning

### COMPUTER

R  
Python  
L<sup>A</sup>T<sub>E</sub>X  
C++  
SASS  
JMP  
SQL

## INTERESTS

CrossFit  
Rock Climbing  
Yoga  
Meditation  
Sailing (ASA Certified)  
Swimming  
Parenting

## RESEARCH (COMPLETED)

### ESTIMATING PROBABILITY DENSITY FUNCTIONS IN HETEROGENEOUS RADAR CLUTTER | IEEE

Antennas and Propagation Society and the United States National Committee of URSI, 26 June 2016  
coauthors: Scott Gabert, Julie Jackson

### INTEGRATING ANTIMICROBIAL RESISTANCE CLASSIFICATION AND FEATURE SELECTION ON AN ONLINE BIOINFORMATICS PLATFORM | NIPS POSTER PRESENTATION

December 2015  
coauthors: John Santerre, James Davis, Fangfang Xia, and Rick Stevens

### ROBUST REGENERATION OF ADULT ZEBRAFISH LATERAL LINE HAIR CELLS REFLECTS CONTINUED PRECURSOR POOL MAINTENANCE | DEVELOPMENTAL BIOLOGY

Volume 402, Issue 2, 15 June 2015, Pages 229–238  
coauthors: Ivan A. Cruz, Scott M. Mackenzieb, Dale W. Haileyb, Trevor L. Hoffmane, Thomas F. Schillinge, and David W. Raiblea

### GRAVIMETRIC ANOMALY DETECTION USING COMPRESSED SENSING | PHD DISSERTATION

December 2014  
Dissertation Chair: Marina Meila

### INTELLIGENCE SURVEILLANCE AND RECONNAISSANCE ASSET ASSIGNMENT FOR OPTIMAL MISSION EFFECTIVENESS |

MASTER'S THESIS  
June 2008  
Thesis Chair: August Roesener

## RESEARCH (IN PROGRESS)

### DIAGNOSING AUTISM SPECTRUM DISORDER THROUGH BRAIN FUNCTIONAL NETWORK CONNECTIVITY

coauthor: Kyle Palko  
examining over 800 fMRI brain scans to detect features that predict autism

### ENSEMBLE MACHINE LEARNING METHODS FOR SEISMIC ANOMALY CLASSIFICATION

coauthor: Steven Magana-Zook  
working with Lawrence Livermore National Labs to classify seismic events