

# Daniel Hallman

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Raytheon Space and Airborne Systems  
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**EDUCATION**      **M.S. in Applied Mathematics**, GPA 3.92      5/2016  
*California State University, Long Beach*

**B.S. in Mathematics**      6/2013  
*University of California, Irvine*

**PROFESSIONAL EXPERIENCE**      **Systems Engineer**      1/2019-Current  
*Raytheon Space and Airborne Systems*      *El Segundo, CA*

- Research and develop a new radar combat ID algorithm.
- Design relational database architectures and test data fusion techniques.
- Selected to maintain responsibilities of previous software engineering position (as of 6/2019).

**Software Engineer**      5/2017-12/2018, 6/2019-Current  
*Raytheon Space and Airborne Systems*      *El Segundo, CA*

- Subject matter expert for assessing the software impact of new jamming modes on the NGJ System Resource Manager (NSRM) of Raytheon's Next Generation Jammer.
- Implement new capabilities and messaging services within NSRM in C++.
- Overhauled a critical data structure within NSRM to decrease its memory usage by over 90%.
- Ensure system integrity by constructing and executing functional tests on both simulation and customer-deliverable hardware.

**RESEARCH EXPERIENCE**      **Naval Research Intern**      6/2016-9/2016  
*Cryogenic Exploitation of Radio Frequency Lab, NIWC Pacific*      *San Diego, CA*

- Developed a subspace-based direction-finding algorithm capable of simultaneously locating any number of RF signals and rejecting all interfering signals.
- Created functions in Matlab for simulating magnetic fields, noise floor calculations, and benchmarking multiple direction-finding algorithms to assist in the development of Superconducting Quantum Interference Device (SQUID) sensors.
- Analytically derived equations on the radiation and interference properties of the SQUID sensors to motivate an alternative design in hardware.

**Naval Research Intern**      6/2015-8/2015  
*Cryogenic Exploitation of Radio Frequency Lab, NIWC Pacific*      *San Diego, CA*

- Created simulations of existing subspace-based direction-finding algorithms in order to provide input on the best techniques for a SQUID antenna.
- Demonstrated that direction-finding is possible with SQUID antenna arrays using simulations created in Matlab.

**TEACHING**      **Graduate Tutor**      1/2016-6/2016  
*California State University, Long Beach*

- Tutored math and engineering students in all undergraduate math subjects.

**Mathematics Teaching Associate**  
*California State University, Long Beach*

8/2013-12/2015

- Wrote curriculum and delivered lectures to 2 classes each semester.
- Created exams and homework assignments and held office hours.
- Classes taught: Math 109, MAPB 11 (Algebra 2 subjects), Business Calculus (lab instructor)

**AWARDS**

**Departmental Graduate Student Honors Award**  
*California State University, Long Beach*

6/2016

**PUBLICATIONS** D. Hallman, S. Berggren, B. Taylor, A. Escobar. “*Extended Dimensionality Reduction MUSIC Method for Frequency-Selective Direction Estimation.*” Proceedings of the 2019 IEEE Asia-Pacific Conference on Applied Electromagnetics, 11/2019 (in press)

**PRESENTATIONS** • “*Extended Dimensionality Reduction MUSIC Method for Frequency-Selective Direction Estimation.*” 2019 IEEE Asia-Pacific Conference on Applied Electromagnetics, Malacca, Malaysia 11/2019  
• “*Yelp Data Analysis - User Review Predictions.*” Mathematics Colloquium, California State University Long Beach, Long Beach, CA 9/2015

**PATENTS**

- Concurrent Direction Finding Methods with SQUID Arrays on a 3D Structure. Patent disclosure submitted 2016 Navy Case # 103964.
- Orthogonal SQUID Arrays on a Baseline with Rotation. Patent disclosure submitted 2016 Navy Case # 103963.

**TECHNICAL SKILLS**

- **Programming Languages:** C/C++, Python, Matlab
- **Other:** Git, SQL, L<sup>A</sup>T<sub>E</sub>X, ClearCase

**REFERENCES**

**Jen-Mei Chang, Professor**  
*Department of Mathematics and Statistics*  
*California State University, Long Beach*  
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**Eun Heui Kim, Professor**  
*Department of Mathematics and Statistics*  
*California State University, Long Beach*  
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**Susan Berggren, Scientist**  
*Cryogenic Exploitation of Radio Frequency Lab*  
*Naval Information Warfare Center Pacific, San Diego*  
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**Kevin Yang, Senior Principal Systems Engineer**  
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