

## WORK EXPERIENCE

### *Systems Engineer*

*September 2015-Present*

NASA Goddard Space Flight Center Earth Science Mission Operations Code 428 in Greenbelt, MD  
contracted by Honeywell Technology Solutions Inc

- Improvement of spacecraft DevOps scripts in an agile dev environment to ensure 100% uptime
- Earned Satellite Console Controller and Satellite Operations Controller certifications
- Achieved error free operations, maintenance, and troubleshooting of Landsat 8

### *Co-Founder and Chief Technology Officer*

*October 2015-March 2016*

WeCook in College Park, MD

- Directed DevOps team that successfully built and maintained using agile development practices on Amazon Web Services EC2 a website to regularly auto bill users, permit editing of chef appointments, and enable Chief Operating Officer to manage hundreds of appointments efficiently
- Enabled profit margins of 10-30% on bulk food chef appointments
- Created operations software which increased time efficiency over 40x and increased accuracy 10x
- Attained revenue growth from hundreds monthly in October to \$10k monthly in February

### *Test Engineer*

*April 2014-September 2015*

NASA Goddard Space Flight Center Planetary Environments Laboratory Code 699 in Greenbelt, MD  
contracted by ADNET Systems

- Contributed to testing Martian satellite MAVEN, and Martian rovers Curiosity and ExoMars
- Calibrated, operated, and provided analysis from the MAVEN Neutral Gas Ion Mass Spectrometer (NGIMS) testbed and instrument, yielding useful science products
- Created Python scripts that trend MAVEN NGIMS testbed data and instrument sensitivity
- Improved usability of MAVEN and Curiosity data web portal called XINA online in AngularJS

### *Research Assistant*

*Summer 2012 and 2013*

National Institute of Standards and Technology (NIST) in Gaithersburg, MD

- Developed simulations in Python of an efficient single photon source in the lab called the Number Squeezed State Generator (NSSG) by using Spontaneous Parametric Down Conversion (SPDC) with system feedback to achieve super-resolution and supersensitivity
- Built Maximum-Likelihood Estimation (MLE) fitting program in Mathematica and Java
- Constructed Modified Levenberg-Marquardt Algorithm (MLMA) fitting program in MATLAB
- Wrote Monte Carlo simulations in C++ and Java of Fabry-Perot interferometers with various methods of intensity detection and various quantum states of light input to study sensitivity, visibility, and other characteristics
- Engineered Arduino based controller to maintain a set-point within 0.05 C from 20 C to 150 C
- Built a proportional-integral-derivative (PID) controller and GUI using C++ and Agile principles

### *Research Assistant*

*August 2010 - May 2013*

Quantum Science and Technology Group in Baton Rouge, LA  
under the supervision of Dr. Jonathan P. Dowling

- Programmed simulations in Mathematica and MATLAB of Mach-Zehnder interferometers with parity detection and various quantum states of light input
- Developed a GUI to run these simulations for a more interactive method to study sensitivity, visibility, and other characteristics
- Published in Physical Review A, by the American Physical Society

## EDUCATION

*Louisiana State University, Baton Rouge, LA*

*May 2013*

- Bachelor of Science in Physics with a Minor in Mathematics, 3.36 GPA

## SKILLS

### *Programming and Software*

- Languages: Python, C++, Java, JavaScript, Mathematica, L<sup>A</sup>T<sub>E</sub>X, MATLAB, Bash
- Libraries: matplotlib, NumPy, SciPy, SymPy, jQuery
- Frameworks: Meteor, Bootstrap, AngularJS
- Operating Systems: Ubuntu, Red Hat, Mac OS X, Windows
- Version Control: Git, SVN
- Other: Jenkins, Amazon Web Services (AWS) EC2

### *Instrumentation:*

- Quadrupole Mass Spectrometers
  - Operated, maintained, and executed troubleshooting of extremely sensitive \$50 million NGIMS at NASA Goddard Space Flight Center
- Piezoelectric sensors
  - Designed a low cost piezo controller Printed Circuit Board (PCB) for quantum metrology at NIST using Electronic Design Automation program KiCad

## PUBLICATIONS

### *Strategies for choosing path-entangled number states for optimal robust quantum optical metrology in the presence of loss*

*July 2012*

- Kebei Jiang, Chase J. Brignac, Moochan B. Kim, Hwang Lee, J. P. Dowling
- Research performed at Louisiana State University on quantum optical metrology using parity detection applied to path entangled Fock states in lossy environments
- Phys. Rev. A 86, 013826 (2012)

## HONORS & AWARDS

### *Google Talk*

*April 2016*

- Presented Landsat 8 DevOps practices at Google's data center in Lenoir, North Carolina

### *Landsat 8 Flight Operation Team Excellence Award*

*February 2016*

- For significant contributions to safeguarding the Landsat 8 mission

### *Pitch Dingman*

*February 2016*

- Won 2016 Pitch Dingman Competition grand prize of \$15,000 for WeCook

### *LA-STEM Research Scholars Program, LSU*

*2010 - 2013*

- Full coverage prestigious scholarship dedicated to promoting diversity in the STEM disciplines through academia, undergraduate research, and mentoring

### *S-STEM Scholars Program, LSU*

*2009 - 2013*

- Academic scholarship dedicated to promoting ethnic/gender diversity in the STEM disciplines

## LEADERSHIP

### *Co-Executive Director, Bitcamp Hackathon*

*2015 - 2016*

- Facilitated diversity, innovation, and creativity to make new technologies
- Managed over a dozen directors for a hackathon with over twelve hundred participants
- Balanced quarter million dollar budget

### *Advisor, Startup Shell*

*2015 - Present*

- Mentor incubating startups & foster entrepreneurship