WORK EXPERIENCE

Systems Engineer   September 2015-Present

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

- Recognition and successful mitigation of the failure of spacecraft procedures using Integrated Test and Operations System (ITOS) Spacecraft Test and Operations Language (STOL)
- Improvement of spacecraft DevOps scripts in an agile dev environment to ensure 100% uptime
- Improvement of transition DevOps shell script resulting in more efficient automated transition from Mission Operation Center (MOC) to backup Mission Operation Center for Landsat 8
- Improvement of regression testing DevOps shell script from over three years ago resulting in more efficient automated regression testing of Landsat 8 spacecraft Front End Processor in MOC
- Improvement of load checksums DevOps shell script resulting in more efficient automated checking of the loads to be sent up to Landsat 8 spacecraft
- Acquired Satellite Console Controller and Satellite Operations Controller certifications
- Achieved successful operations, maintainance, and troubleshooting of Landsat 8 without operator errors
- Successful operations of Landsat 8 during rollout of refreshed Mission Operations Center hardware/software
- Successful transition from regular Landsat 8 operations to extended lights out operations relying on automated software more and operators less to save customers money

Co-Founder and Chief Technology Officer   October 2015-March 2016

WeCook

- 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 (tech team left when CEO would not pay already agreed upon compensation for their work)
- Wrote and used chef appointment DevOps Python script to automate the creation of chef appointment documents used by the organization which instructed the chefs on the address, names, time of appointment, location, phone number, how much of each ingredient to buy, what cooking tools to bring, and how to cook the food depending on which foods and how much the customer chooses for a specific appointment
- Informed the executive team of technology limitations and expectations to inform business decisions
- Started consumer facing website using JavaScript, Meteor, and Boostrap with user accounts, Stripe and Facebook integration, and features for presenting meals and nutrition to users as well as scheduling chef appointments (did not need to deploy because of an extremely cheap development team we later tapped)
- Obtained profit margins of 10-30% on bulk food chef appointments
- 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
under the supervision of Dr. Paul Mahaffy, contracted by ADNET Systems

- Contributed to Martian satellite MAVEN, and Martian rovers Curiosity and ExoMars
- Tested MicroPirani pressure sensor for ExoMars rover resulting in a well developed and tested solution for taking pressure on Mars
- Successfully calibrated and operated the MAVEN Neutral Gas Ion Mass Spectrometer (NGIMS) testbed and instrument achieving the interpretation of MAVEN data to useful science products
- Created Python scripts that trends MAVEN NGIMS testbed data and instrument sensitivity resulting in the confirmation that the MAVEN satellite's mass spectrometer and our testbed on the ground is working correctly and not degrading over the life of the mission
- Improved usability of MAVEN satellite and Curisoity rover front-end web portal that presents and allows manipulation of satellite engineering and science data to the engineers and scientists called XINA online in AngularJS

Research Assistant   *Summer 2012 and 2013*

National Institute of Standards and Technology (NIST) in Gaithersburg, MD
under the supervision of Dr. Alan Migdall

- 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 to characterize Transition Edge Sensor (TES) data output
- Constructed Modified Levenberg-Marquardt Algorithm (MLMA) fitting program in MATLAB for TES data output
- Programmed 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 low cost temperature controller to keep non-linear crystals in the range 20 C to 150 C to within 0.05 C
- Used the agile development method in C++ on Arduino to create and tune an easy to operate and troubleshoot temperature proportional-integral-derivative (PID) controller and GUI

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

EDUCATION

Louisiana State University, Baton Rouge, LA   *May 2013*

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

Chase J. Brignac
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List v1.1

SKILLS

Programming and Software

- Languages: Python, C++, Java, JavaScript, Mathematica, LaTeX, 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

Landsat 8 Flight Operation Team Excellence Award   *2016*
- For significant contributions to safeguarding the Landsat 8 mission

Google Talk   *2016*
- Invited to Lenoir, North Carolina to talk about Landsat 8 at Google's data center

Pitch Dingman   *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 diversity in the STEM disciplines

LEADERSHIP

Bitcamp Hackathon Co-Executive Director   *2015 - 2016*
- Organized massive hackathon with over 1200 attendees that took a year of planning and coordination
- Facilitated diversity, innovation, and creativity to make new technologies
- Managed extensive team of over a dozen directors
- Balanced budget amounting to hundreds of thousands of dollars

Startup Shell   *2015 - Present*
- Fostering entrepreneurship through collaboration at UMD's incubator advising startups
- WeCook was founded in the Startup Shell