Chase J. Brignac

chase.brignac@gmail.com
(225)-333-9947

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

- Improved spacecraft DevOps scripts in an agile dev environment to ensure 100% uptime
- Achieved 100% data capture rate, error free operation, and superb troubleshooting of Landsat 8
- Earned Satellite Console Controller and Satellite Operations Controller certifications

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

WeCook in College Park, MD

- WeCook provides personal chefs to cook all of a customers meals on request via a web app
- 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
- 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
- Enabled profit margins of 10-30% on bulk food chef appointments

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 Curisoity 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, 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

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