

# Jared S. Ivey

## contact

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## website

jaredivey.com

## programming

C, C++, Java, Python,  
Bash, SQL, MATLAB,  
L<sup>A</sup>T<sub>E</sub>X, PHP, C#, Fortran,  
CUDA, OpenCL, MPI,  
pthreads

## experience

2018–Now

### GEORGIA TECH RESEARCH INSTITUTE

Robins AFB, GA

#### *Research Engineer*

- Lead product owner and software systems engineer for the Service-Oriented Architecture Enterprise Service Bus (SOA ESB) supporting Air Force Distributed Common Ground System (AF DCGS) under a Scaled Agile Framework (SAFe).
- Collect and prioritize objectives from all intelligence spaces (INTs) in AF DCGS as they relate to the SOA ESB, a shared service that implements features within a publisher/subscriber and message-oriented framework in a consistent and open-source manner across the AF DCGS Enterprise.
- Design and implement a workload consolidation and organic transition for the development of SOA ESB through actions including creation and configuration of consolidated spaces in Confluence, Jira, Bitbucket, and Jenkins via the Defense Intelligence Information Enterprise (DI2E) framework, synthesis of the team structure to support paired programming and knowledge transfer from contracted to organic support personnel, and a coordinated transition of sprint cadence to support a more consistent and appropriate release management cycle.
- Research and leverage domain knowledge relevant to the systems interacting with SOA ESB and within the SOA ESB architecture itself to better inform design decisions for the AF DCGS Enterprise open architecture as well as educate colleagues regarding these concepts. Relevant subjects understood include, but are not limited to: MPEG standards and the transport stream; JPEG and NITF imagery standards; Knowledge as a Service; artificial intelligence/machine learning; message routing via Apache ActiveMQ Artemis and Camel; cataloging via Apache Solr; container orchestration via Docker and Kubernetes.

2009–2018

### 577 SOFTWARE MAINTENANCE SQUADRON

Robins AFB, GA

#### *Electronics Engineer*

- Technical software lead and subject matter expert in external geographic dataset management and pre-/post-mission data processing tools for the E-8C Joint Surveillance Target Attack Radar System (JSTARS).
- Provided leadership and direction for a Scrum team of 8 engineers in the architectural design and development of new and existing software products for JSTARS through direct guidance, mentoring, and process facilitation for team members and by conducting products using Agile processes throughout the entire software development life cycle.
- Mentored team members to enhance knowledge and skills, organized workload to optimize developmental opportunities for each team member based on current skill level, and explained planned solutions and thought processes used to develop solutions that met organizational and industry standards for software development.
- Lead team through Sprint estimation, planning, software development, and delivery to the development build using Rational ClearTeam Explorer.
- Authored, managed, and maintained the updates of the technical processes for the organization by leading the effort and guiding its overall completion while delegating and coordinating tasks among team members.
- Effectively communicated project status, risks, and issues to project leadership/management and mission partners. Researched, analyzed, and determined available courses of action for resolving risks and issues. Developed briefings and technical demonstrations to communicate and document progress, results, plans, and corrective actions to mission partners and stakeholders.
- Duties included initiating, directing, and coordinating software studies and modifications, resolving complex requirements, and refining new software techniques.
- Implemented, functionally tested, and reviewed Software Change Requests (SCRs) and Software Tracking Requests (STRs).

- 2018–2019 **PENFIELD COLLEGE, MERCER UNIVERSITY** Macon, GA  
*Adjunct Faculty*  
 – Organized and orchestrated courses in computer programming in a hybrid (traditional and online) format to students pursuing the B.S. degree in Informatics in the Department of Mathematics, Science, and Informatics.  
 – Duties included preparing, administering, and grading course assignments and testing materials, planning and conducting lectures, and facilitating student learning and understanding through direct assistance.
- 2013–2014 **DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING, GEORGIA TECH** Atlanta, GA  
*Teaching Assistant*  
 – Provided guidance and assistance for approximately 20 undergraduate students per semester to improve the formatting and appearance of resumes, technical documents, and presentations.
- 2009 **DEPARTMENT OF CHEMICAL ENGINEERING, GEORGIA TECH** Atlanta, GA  
*Computer Assistant*  
 – Provided computer support to faculty, staff, and students by granting building access, resetting account passwords, replacing printer paper and ink cartridges, and installing software.  
 – Coordinated with Dell Support to request replacement computer hardware, installed the components when they arrived, and shipped the nonoperational components to the manufacturer.  
 – Aided user account migration from one server network to another by editing users' security permissions, adding computers to the network, and adding network printers to a server.
- 2008 **DEPARTMENT OF BIOMEDICAL ENGINEERING, GEORGIA TECH** Atlanta, GA  
*Teaching Assistant*  
 – Facilitated and evaluated assessments for over 70 students in a Biotransport class.
- 2007–2008 **SOUTH CENTRAL POOLS** Forest Park, GA  
*Assistant to Operations Manager*  
 – Performed day-to-day operations including, but not limited to, shipping and receiving of UPS and freight line shipments, inventory control, and order processing.

## education

- 2013–2017 **Ph.D.** in Electrical and Computer Engineering [3.80/4.00] Georgia Institute of Technology  
 Research Advisor: Dr. George F. Riley  
 Thesis: Validation of Scalable Software-Defined Network Simulations Using Simulation-Based Routing Applications
- 2010–2012 **M.S.E.** in Software Engineering [4.00/4.00] Mercer University  
 Minor in Engineering Management
- 2005–2009 **B.S.** in Biomedical Engineering [3.76/4.00] Georgia Institute of Technology  
 Summa Cum Laude

## publications

DEC 2017	<b>Simulating Networks with NS-3 and Enhancing Realism with DCE</b> J. S. Ivey, B. P. Swenson, and G. F. Riley, In Proceedings of the Winter Simulation Conference 2017	Las Vegas, NV, US
DEC 2017	<b>Scalability Comparison of SDN Control Plane Architectures Based on Simulations</b> H. Yang, J. Ivey, and G. F. Riley, In 2017 IEEE 36th International Performance Computing and Communications Conference (IPCCC)	San Diego, CA, US
OCT 2017	<b>Advancing Software-Defined Networks: A Survey</b> J. Cox, J. Chung, S. Donovan, J. Ivey, R. Clark, G. Riley, and H. Owen, In IEEE Access, vol. 5, pp. 25487-25526.	Online
SEP 2016	<b>Designing and enabling simulation of real-world GPU network applications with ns-3 and DCE</b> J. S. Ivey, G. F. Riley, B. P. Swenson and M. L. Loper, In 2016 IEEE 24th International Symposium on Modeling, Analysis and Simulation of Computer and Telecommunication Systems (MASCOTS)	London, UK
JUN 2016	<b>Analysis of programming language overhead in DCE</b> J. S. Ivey and G. F. Riley, In Proceedings of the Workshop on ns-3 (WNS3 '16)	Seattle, WA, US
MAY 2016	<b>Comparing a scalable SDN simulation framework built on ns-3 and DCE with existing SDN simulators and emulators</b> J. S. Ivey, H. Yang, C. Zhang, and G. F. Riley, In Proceedings of the 2016 annual ACM Conference on SIGSIM Principles of Advanced Discrete Simulation (SIGSIM-PADS '16)	Banff, AB, CA
MAY 2015	<b>Phold performance of conservative synchronization methods for distributed simulation in ns-3</b> J. S. Ivey, B. P. Swenson, and G. F. Riley, In Proceedings of the 2015 Workshop on ns-3 (WNS3 '15)	Barcelona, ES
DEC 2014	<b>Performance of conservative synchronization methods for complex interconnected campus networks in ns-3</b> B. P. Swenson, J. S. Ivey, and G. F. Riley, In Proceedings of the Winter Simulation Conference 2014	Savannah, GA, US
MAY 2014	<b>Phold performance for distributed network simulation under conservative synchronization methods in ns-3</b> J. S. Ivey, G. F. Riley, and B. P. Swenson, In Proceedings of the 2nd ACM SIGSIM Conference on Principles of Advanced Discrete Simulation (SIGSIM PADS '14)	Denver, CO, US

## certifications

2015	<b>Systems Planning, Research, Development and Engineering</b> Engineering Levels 1 and 2	Defense Acquisition University
2012	<b>Systems Planning, Research, Development and Engineering</b> Science and Technology Manager Levels 1 and 2	Defense Acquisition University
2011	<b>Systems Planning, Research, Development and Engineering</b> Program Systems Engineer Level 1	Defense Acquisition University
2011	<b>Program Management</b> Level 1	Defense Acquisition University
2010	<b>Software Professional Development Program</b> Software Development track	Air Force Institute of Technology

## awards

- 11 SEP 2015 **Notable Achievement Award** 577 Software Maintenance Squadron  
Completely overhauled JSTARS design for importing and interfacing with DAFIF data utilizing a SQL-based implementation over the previous XML-based version, enabling access to DAFIF information for the entire world rather than a small subset inside of a defined mission center. As a result of these software changes, JSTARS operators will have the ability to rapidly and accurately locate airfields for tracking or emergency diversion of aircraft as well as to view possible routes for airborne re-planning.
- 27 AUG 2012 **Notable Achievement Award** 577 Software Maintenance Squadron  
Automated a number of operations in the ancillary JSTARS disk replication application. The implemented enhancements provided the users with extremely useful disk replication functionalities that greatly reduced the time required to build mission kits and eliminated the need for operators to use native OS commands.
- 19 MAR 2012 **Time-Off Award** 577 Software Maintenance Squadron  
Provided list sorting capability to several JSTARS tabular displays (TDs) and extended the list updating functionality for each of these commonly used TDs. The users can now sort entities contained in each TD based on the select field, reducing time and effort in navigating and selecting entities and allowing the warfighter more accurate situational awareness of the battlefield.
- 28 JUL 2011 **Notable Achievement Award** 577 Software Maintenance Squadron  
Provided expertise to generate and complete several projects; demonstrated outstanding coordination with Northrop Grumman in completing said projects and became subject matter expert of the JSTARS disk replication application. These efforts ensured the flight would exceed its annual expected software changes for the year.
- FEB 2010 **Employee of the Month** 577 Software Maintenance Squadron  
Delivered the highest number of STRs for the month of February (30% of total 30+ member team production) and engaged in thorough and timely technical reviews of software changes. Assisted the customer in defining clear requirements for an SCR, maintained the workload following several technical discussions with the primary Northrop Grumman subject matter expert, and received an invitation to go TDY to demonstrate technical proficiency. Subsequently delivered 4 complex changes in 2 short TDY weeks, impressing the subject matter expert and inheriting all future workload in that area.

## training

- 2011 **DEF 1013P FalconView Advanced Users** Georgia Tech Research Institute
- 2011 **DEF 1012P Introduction to FalconView Basic Operations** Georgia Tech Research Institute
- 2010 **HE634S HP OpenVMS v8.3 Programming Features** PARSEC Group

## biography highlights

- APR 2016 **First son Knowles Steven Ivey born at Coliseum Medical Center in Macon, GA**
- MAR 2011 **Married Sloane Oldham Ivey in Orange Beach, AL**
- FEB 2011 **Purchased first home in Lizella, GA**
- MAY 2005 **Graduated from First Presbyterian Day School in Macon, GA**
- NOV 1986 **Born at Houston County Medical Center in Warner Robins, GA**