# • nicholas squires •

## • SOFTWARE AND SYSTEMS ENGINEER •

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## PROFILE

**Multi-talented, innovative, top producing engineer** who has consistently demonstrated exceptional integrity, work ethic, continued learning, and ability to seek out and take on new challenges well above level designation during his 15 years of working in the aerospace and renewable energy industries in a variety of technical engineering disciplines.

**Sought after subject matter expert in software build/release management** known for implementing cutting-edge development operations, build automation, continuous integration, software production, and software configuration management solutions.

**Extensive lab management experience** known for designing, planning, procuring, and implementing low-cost, innovative, and cutting-edge information technology solutions specializing in small to medium-sized software development, integration, data centers and test environments.

**Expert software developer** with proficiency in the full software lifecycle. Known for designing and implementing cutting edge web server/client software, automation tools, and software systems. Proficiencies with current, industry standard programming/scripting languages, software tools, and best practices. Experience with functional, unit, and acceptance testing.

**Expert Systems Administrator and Integrator** related to networks, workstation/server/data center hardware/software systems design, open source software, and virtualization technologies. Experience designing and implementing backbone, wide-area (WAN) and local area (LAN) networks, specializing in harsh environment deployments, renewable energy microgrids, and power systems.

## AREAS OF STRENGTH

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|---|---|---|
| Software and Systems Engineering | Software and Systems Integration and Test | Lab Management and Design |
| Software Development | Software Automation | Software Configuration Management |
| Software Build and Release Management | Virtualization Technologies | Information Technology |
| Continuous Integration | Continuous Delivery | Technical Documentation |
| Development Operations (DevOps) | Software and Systems acceptance testing, field integration and commissioning | Software Processes |

## PROFESSIONAL DEVELOPMENT AND EDUCATION

**SYSTEMS ENGINEERING FUNDAMENTALS CERTIFICATE**
*California Institute of Technology – Center for Technology and Management*

**MASTER OF SCIENCE – PHYSICS**
*California State University Long Beach*
+ CSULB Department of Physics Graduate Honors
+ Papers: Electronic Excitations in Graphite and Graphene Multi-layers

**BACHELOR OF SCIENCE – PHYSICS, MINOR – MATHEMATICS**
*University of California Davis*
+ College of Letters and Science Highest Honors
+ Department of Physics Citation
+ Senior Thesis: The Heisenberg Model for 2D Spin-1/2 Triangular Antiferromagnets: An Application to $Cs_2CuBr_4$
+ Phi Kappa Phi Honors Society

## EXPERIENCE

**INDEPENDENT CONSULTANT • 2015 – present**
**Software and Systems Engineer • Educator**
+ **Fashion Institute of Design and Merchandising** • 2016
  + Mathematics Curriculum Development

+ **NRG Energy, Inc. - Station A** • 2015
  + **Software and Systems Engineer • Chief Communications Architect**

- Lead the design and development of the communications, information technology and data acquisition system for the *Virgin Limited Edition (VLE)/Necker Island Renewable energy Microgrid*

  ***Selected Accomplishments***
  - Achieved customer acceptance of Phase II of the Necker Island Microgrid Communications system design

## THE BOEING COMPANY • 1999 – 2015

**Software and Systems Architect • Boeing Ventures Microgrids • 2013 - 2015**

- Software development in support of automation efforts. Built an automated logging system to aggregate data from various subsystems.
- Lead the design, development, integration, implementation, and commissioning of the communications and data acquisition system for the Virgin Limited Edition/Necker Island (1.2 MW) and Boeing Mesa (30kW) renewable energy microgrid projects
- Software and system requirements definition, analysis, and management
- Designed and implemented interfaces and integrations for all hardware and software subsystems into the communication system
- Defined, designed, and implemented the secure remotely accessible WAN/LAN, microgrid computing and data collection system. This consisted of a small data center, fiber optics backbone, six managed network segments that integrated three 300kW diesel generators, 300kW solar array, 1.2 MW energy storage system, 900kW wind turbine, various meters and power controls, and numerous power loads including a desalinization plant, pool heaters, and other operational loads.
- Developed the communications system acceptance test plan

***Selected Accomplishments***
- Achieved customer acceptance of the Necker Island Microgrid Communications design; my design played an instrumental role in winning Boeing's $1 million Phase I implementation contract.
- Implemented Phase I communications and data acquisition system on Necker Island and achieved commissioning status for the microgrid system.
- Implemented communications and data acquisition system for the Mesa microgrid and achieved solar array commissioning status.

**2000 - 2013**

**Roles: Systems Engineering, Software Development, DevOps Manager, Software Configuration Manager, Build & Release Manager, Systems Administrator**

**Projects:**

- **Boeing Ventures Secure Grid Manager (SGM)**
- **Commercial Crew Integrated Capability (CCICap) Autonomous Rendezvous and Docking**
- **High Integrity GPS (iGPS)**
- **Software Engineering Site Infrastructure Group (ROSES)**
- **International Space Station Propulsion Module (SSPM)**
- **Space Shuttle Backup Flight System (BFS) • 20 – 2013**
  - Software development in support of build and test automation efforts.
  - Responsible for managing all software releases and Continuous Integration system. Fully automated build process including the nightly, engineering, and release builds with unit testing, static analysis, functional testing, code metrics, user documentation, software packaging, and continuous delivery to various test and production environments.
  - Responsible for the integration of 3rd party hardware & software platforms
  - Lead system architecture, definition, test, procurement, and implementation, of software development, test, and integration environments
  - Lead the specification, design and development of the SGM deployment platform. Responsible for integration and system checkout at partner hardware-in-the-loop (HWIL) facilities in support of critical program milestones.
  - Designed a mechanism for remote management of the fielded Microgrid system.
  - Responsible for configuration management of all SGM environments within Boeing and at remote partner sites.
  - Responsible for the integration, test, and operation of the SGM system in support of the Smart Grid live demonstration; program's biggest milestone.

***Selected Accomplishments***
- Boeing Achievement award for Technical Leadership in the successful demonstration of Boeing's Smart Grid Technologies at the 2012 Smart Grid Live conference
- Implemented virtualization and open source technologies to avoid upwards of $500K in capital costs

## FASHION INSTITUTE OF DESIGN AND MERCHANDISING (FIDM) • 2007 – 2012

**Mathematics Instructor**

- Developed curriculum and teaching materials for college level math courses
- Developed mathematics based projects focused on exploring mathematics in student's design and merchandising degrees

+ Invented a web-based grading system to provide students real-time, historical and, forecasted grading data

***Selected Accomplishments***

+ Five-time "Instructor of the Year" nominee

## SKILLS

**Software Proficiencies and Development Platforms**
Subversion, Git, GitHub, Bitbucket, Atlassian Suite, Cisco IOS, MongoDB, VMWare Suite, MySQL, Linux Utilities, Jenkins CI Server, InstallAnywhere, Trac, XAMPP, DOORS, Matlab, Eclipse, Wireshark, Adobe Premier/After Effects/Photoshop/Illustrator, Processing, Arduino, Raspberry Pi

**Software Technologies and Practices**
Continuous Integration, Version Control Systems, Defect Tracking, Automation, Virtualization, Open Source Software, Software Testing, Agile Development Practices (Scrum, etc), Web Servers (Apache, IIS), Wikis (Trac,Mediawiki),Weblogs (Wordpress), SAN, iSCSI, NFS, Samba, IPtables, NTP, Active Directory, LDAP, DNS, DHCP

**Programming Languages, Scripting, Markup, Protocols**
Python, Bash, PERL, PHP, SQL, CGI, HTML, CSS, XML, REST, SOAP, C, JavaScript (Frameworks: Prototype, Script.aculo.us, jQuery), AJAX, JSON, DNP3, Modbus, Open Sound Control (OSC), MIDI, HTTP, TCP/IP

**Operating Systems**
Linux (Debian, SuSE, Redhat, CentOS, Ubuntu), Microsoft Windows desktop and Server), Mac OS

## OTHER

./ Project portfolio: www.arbitraryy.com
./ Bitbucket: https://bitbucket.org/ArbitraryY/
./ GitHUb: https://GitHub.com/ArbitraryY/
./ LinkedIn: https://www.linkedin.com/in/nicholassquires