

# **KUSH, NISHCHAL SINGH**

Queensland, Australia.

[kush@kush.com.fj](mailto:kush@kush.com.fj) • +61 4 0605 9709 • [www.kush.com.fj](http://www.kush.com.fj)

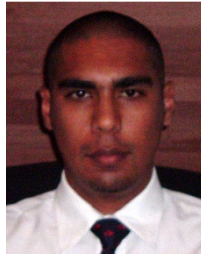
---

## **INFORMATION AND COMMUNICATION TECHNOLOGY SECURITY SPECIALIST**

### **CORE COMPETENCIES**

- Software Engineering.
- Web Development and Management.
- Security
- Research & Development.
- Project & Team Leadership.
- Network and Systems Administration
- Disaster Recovery Planning.
- RF Link Planning and Deployment.

## BIO DATA



Name: Nishchal Kush

Nationality: Fiji Islander

Telephone: +61 4 0605 9709 (Mobile)

E-mail: [kush@kush.com.fj](mailto:kush@kush.com.fj)

Drivers Licenses: Fiji, Fiji Islands – Full Class 2,8  
Queensland, Australia – Open Class C

Academic Qualifications: Masters of Information Technology (Security), QUT – 2010  
Bachelor of Information Technology (Honours), QUT – 2003  
Bachelor of Information Technology, QUT – 2000

Academic Awards: Best Paper : 2<sup>nd</sup> Cyber Resilience Conference – 2011  
Dean’s Merit Award – 2010  
Golden Key International Honour Society – 2010  
Australian Mathematics Competition Prize – 1996

Professional Memberships: Institute of Electrical and Electronics Engineers (IEEE).  
Association for Computing Machinery (ACM).  
Australia Computer Society (ACS).

Certification Prince2 Foundation (P2R/A057683) – 2010  
Prince2 Practitioner (P2R/A058683) – 2010

## TECHNICAL PROFICIENCIES

<b>Platforms:</b>	<p><u>Linux</u> – Redhat/CentOS/Fedora/Ubuntu/Slackware/FreeBSD/Mandrake/ /LFS/TurboLinux/Debian <u>MS Windows (32bit)</u> – Windows NT/9X/Me/2000/XP/2003/2008/Vista/Windows7 <u>MS Windows (16bit)</u> – Windows 3.1/3.11. <u>MS DOS</u> – Disk Operating System 5.0/6.22. <u>UNIX</u> – Sun Solaris, BSD UNIX.</p>
<b>Networking:</b>	<p><u>TCP/IP</u> – Linux – Redhat/CentOS/Fedora/Ubuntu/Slackware/Mandrake/FreeBSD Microsoft Windows – NT/95/98/Me/2000/XP/2003/2008/Vista/Windows7 <u>Network Infrastructure</u> – 10/100/1000BaseT/Tx STP/UTP Cable Estimation, Laying, Termination, Testing, and Commissioning, 10Base2 Cable Laying Estimation, Laying, and Termination, Fibre Optic Cable estimation, buffer splicing, OTDR Testing and Commissioning. <u>Network Design</u> – Managed Switch Management and Configuration – (HP, Cisco), Network Routing (Cisco), PC (Linux) based Routing, Firewall design (IPTables, Packetlogic, Endian UTM). <u>Wireless Infrastructure</u> – Link Budgeting, Profile Analysis, Frequency Planning, Radio Configuration, Site Surveying, Link Deployment, Testing and Maintenance (Redline, Airspan, Bridgewave, Dragonwave, Airaya, Solectek, emSolutions, SkyPilot, Ruckus, Infinet Wireless).</p>
<b>Project Management:</b>	<p><u>Documentation</u> – Project charter, request for proposals, tender evaluation, project plans, project budgets, requirements specifications, technical specifications</p>
<b>Programming Languages:</b>	<p>Java, PHP, C/C++, PERL, HTML, DataFlex, Visual Basic .NET, Visual/Access Basic, BASIC, Haskell, 8086 Assembly, ASP, Unix Shell (bash,sh,cmd) Scripting.</p>

## **PUBLICATIONS**

Nishchal Kush and Ernest Foo and Ejaz Ahmed and Irfan Ahmed and Andrew Clark (2011) Gap Analysis of Intrusion Detection in Smart Grids, Proceedings of the 2nd International Cyber Resilience Conference



3<sup>rd</sup> Nov 2006 – 18<sup>th</sup> Apr 2008

Mackay Computer Services

Mackay

### **Technical Support Engineer**

- Monitoring and maintenance of Redfox (SkyPilot Networks) wireless broadband internet infrastructure for optimal performance and reliability. SNMP monitoring (Castlerock SNMPc / Opmanager) setup and management, including alarms and alert configuration. As well as management of services, such a DNS (Bind), authentication (Radiator/RADIUS), email (Exim) and internet traffic management, routing and switching functionality (Cisco routers and switches)
- Planning, budgeting, deploying and maintaining wireless backhaul links using Redline, Airspan, Solectek, Wave-rider, Dragonwave, and emSolutions point-to-point radio technology, using vendor and third-party software for path profile analysis (RadioMobile). Including coordinating rigging and installation staff for site surveys. Configuration, installation, and deployment of backhaul communication links.
- Systems and network administration of all internal and external infrastructure including windows and Linux based servers, PABX and VOIP systems and Cisco routers and switches. Firewalls and traffic shaping (Packetlogic). Including customer VPN deployment using SnapGear hardware.
- Microsoft Windows 2003 server administration and management, including user setup and management, application administration and support, security management and deployment, including internal Microsoft Exchange 2003 server management with Anti-virus and Anti-SPAM control (Sunbelt Ninja).
- Server and PC hardware servicing maintenance and support, Printer, ATM, PoS and other peripheral maintenance and support. Support for third parties, such as Getronics, AWA, Bytecraft, HP, Woolworths, Myers/Coles, and IBM.

11<sup>th</sup> Apr 2005 – 1<sup>st</sup> Nov 2006

Fiji Electricity Authority

Suva

### **ICT Systems Specialist**

- Documented and re-engineered ICT helpdesk processes, guidelines, procedures and policies to ensure quick and efficient communication and problem resolution to achieve customer satisfaction. Migrated ICT helpdesk from the old helpdesk management software to HelpMaster Pro, and implemented helpdesk reporting to management.
- Prepared RFC documentation and evaluated submitted tenders and made recommendations to the FEA board for approval, including plans for FEA's ICT DRP as part of BCP requirements and actions plans, FMIS, HRM/HRIS.
- Developed corporate acceptable usage policies for FEA's internet, e-mail, software, and hardware services. Assisted in reviewing FEA's core applications and systems to enable integration of all systems including migration to newer platforms to address emerging requirements.
- Project member for SCADA team. Provided technical expertise in management and operation of HP UNIX servers. Assisted in migrations and standardisation of SCADA protocol to DNP3 using propriety code running on Moxa units for protocol translation from other protocols, such as Modbus, Profibus, etc.
- Deployed PLC technology for "last-mile" connectivity and using microwave for "back-haul" to provide internet connectivity to remote locations, as part of FEA's BPL project. Managed Linux servers and Cisco routers and switches as part of the project and operational work for FEA ISP services.

28<sup>th</sup> Jun 2004 – 6<sup>th</sup> Apr 2005

Colonial (Fiji) Ltd

Suva

### **Assistance Manager Infrastructure Support**

- Supervised and managed day-to-day running of Colonial Fiji Helpdesk, and management of the IT Infrastructure Support Team. Developed guidelines for presenting operational reports to higher-level management on a weekly basis.
- Coordinated and managed IT Infrastructure Support projects. Managed resources to balance between project work and operational support work and ensuring tasks undertaken are completed within budget and on time. Managed infrastructure rollout for new Bank branches.
- Performed team appraisals and set management objectives for team members. Ensured that objectives were completed within set targets by monitoring and providing guidance by mentoring and coaching.
- Project management of IT Infrastructure projects, such as new bank branch commissioning. Including the planning of all cabling and communications requirements as well as systems SOE preparation and deployment.
- Key Performance Indicator monitoring. Collating team tasks on a daily and weekly basis and prepared monthly management reports to indicate KPI performance, ensuring that team adhered to monthly KPI and wherever possible assisting team meet such KPI. Assisted with reporting for board level reports.

1<sup>st</sup> Feb 2003 – 27<sup>th</sup> Jun 2004

Colonial (Fiji) Ltd

Suva

### **IT Analyst Programmer**

- Provided software architecture input and analysis and design on projects such as Direct Deposit and Cash transfer project for Life Insurance claims payout. Provided technical support to projects teams for data integrity work. Prepared technical requirements documentation and assisted development team with any implementation issues.
- Designed and managed software integration between CLAS and cheque printing software. system architecture and design work and software engineering on various life assurance and other systems in Dataflex, VB, VB.net. Liaised with software programmers from other teams to complete these projects.
- Team lead for design and development of a standardized software architectural framework in VB.net. Designed a layer based architecture to ensure software engineering best practises were followed, such as code re-use, use of design patterns. However the project was pre-maturely shelved due to a lack of budget and higher priority of other pressing project works.
- Software development using DataFlex for operational work, software maintenance as well as new projects. Liaised with Insurance Business Support team to assist software programmers work on bug fixes, software patches, software enhancements, and new projects.
- Prepared migration plans and successfully migrated the entire CLAS software from DataFlex 2.3 to DataFlex 3.0. This included liaising with IT Helpdesk and Infrastructure Teams to upgrade SOE and update all banking and life assurance branch computers, including UAT testing with the Insurance Business Support teams.

Jul 2002 – Oct 2002

Queensland University of Technology

Brisbane

### **Tutor (Part-time)**

- Part time tutor for ITB424 – Software Engineering Principles, the key objective being to teach students how to manage and control software development processes for large projects.
- Provided technical and managerial guidance to students for the delivery of their projects, i.e. to develop a W3C compliant HTML validator.
- Marked student assessments, including grading project work and final examination papers.

23<sup>rd</sup> Nov 2001 – 5<sup>th</sup> Jul 2002

Marinoc Pty Ltd.

Brisbane

### **Systems Engineer**

- Server builds construction, OS installation and configuration. Linux & Windows NT systems for customer locations. Server deployment. Performed routine maintenance, checked backups and recovery. Performed security analysis to detect intrusion.
- Systems networking of Microsoft Windows NT/9x/Me/2K/XP clients with emphasis on integration with Linux server (Samba), as the file server, firewall (IPChains/IPTables) and end-user administration.
- Web and software development on Linux platform using PHP, MySQL, and C/C++. Other projects included SCADA HMI design (C++/Lesstif) for Powerlink and e-commerce type application (KnowMail) for subscription emailing of research articles.
- End user support for Microsoft Windows NT/9x/Me/2K/XP, Helpdesk administration and software and systems documentation, and customer liaison and junior staff supervision.
- Server administration on Linux – Web server (Apache) administration and security management, DNS (Bind) administration, E-mail server (Sendmail) administration, FTP (wuftpd) server administration, user and security management, Web proxy server (Squid) administration, Samba server and user administration, Firewall implementation (IPChains/IPTables).

4<sup>th</sup> Dec 2000 – 23<sup>rd</sup> Nov 2001

QSIPayments Inc.

Brisbane

### **Software Engineer**

- Developed and maintained parts of the QSIPayment Server in Java, and unit tested developed classes using JUnit. Used design patterns in the design functionality, code refactoring and during code maintenance.
- Developed a validation framework for validating web page input using XML to specify the validation rules, in Java. Framework also enabled business rules specification using XML, this enabled greater flexibility in code deployment and rapid software customisation without code change.
- Focused development on ensuring good application of development methodologies and approaches were employed. Code documentation testing and review, as well as implementation of continuous builds using Ant to ensure build and code integrity.
- Performed object oriented analysis and design as part of maintenance for code refactoring and optimization. Strong emphasis on Extreme Programming practices such as peer-programming, code reviews, and just-in-time development.
- Team member for American Express PaymentServer development team. Developed and customised PaymentServer for AMEX card processing and validation. Provided support and assistance to integration team.

Jul 2000 – Oct 2000 Queensland University of Technology

Brisbane

### **Tutor (Part-time)**

- Part time tutor for ITB410 – Software Development 1, which was delivered in Java. Provided necessary direction for students to achieve course objectives
- Marked student assessments, including addressing poor performance directly with students to provide guidance to achieve unit objectives.
- Communicated with unit coordinator to raise issues highlighted by students and proposed solutions to some of the issues raised.

28<sup>th</sup> Oct 1999 – 1<sup>st</sup> Jun 2000

Marinoc Pty Ltd.

Brisbane

**Junior Information Technology Engineer(Part-time)**

- Software development for clients for web application using Linux, Apache and PERL for common gateway interface (CGI) development. Project staging and deployment.
- Software development in C++ for graphical user interface (GUI) design for human machine interface (HMI) design under Linux environment, using Fast-Light Toolkit (FLTK).
- End-user and client support over the telephone as well as e-mail. Provided general computer support and assistance on a number of applications and issues.

## EDUCATION

- Feb 2011 – Present Queensland University of Technology Brisbane
- **Doctor of Philosophy.**
  - Research topic “Enhancing Incident Detection in Smart Grids”.
- Feb 2010 – Nov 2010 Queensland University of Technology Brisbane
- **Master of Information Technology.**
  - Completed Masters of Information Technology program, undertaking a major in Security, with a strong focus on SCADA networks.
  - Major, 48 credit point, project involving the research and development of a SCADA smart-grid test bed for network analysis and security evaluation purposes.
  - GPA: 6.750 (7 point scale)
- Jun 2000 – Nov 2003 Queensland University of Technology Brisbane
- **Bachelor of Information Technology (Honours).**
  - Researched Software Engineering Processes after withdrawing from Reinforcement Learning in Robotic. Developing Software Tool for implementing Requirements trace-ability in the Software Engineering Process.
  - Started work on OpenComplete (under GPL) project – tool for managing software engineering projects and implementing automated trace-ability.
  - GPA: 4.000 (7 point scale)
- Feb 1998 – Jun 2000 Queensland University of Technology Brisbane
- **Bachelor of Information Technology.**
  - Majored in Data Communications and Software Engineering.
  - QROSO (QUT Robot Soccer) project team member, Developed and tested game play strategy using Java based simulator.
  - GPA: 4.958 (7 point scale)

## EXTRA-CURRICULAR

- Jun 1998 – Jun 2000 Queensland University of Technology Brisbane, Australia.
- **Peer Assisted Study Session (PASS) Leader.**
  - Facilitated study sessions for students to assist create a learning environment with emphasis on group learning and peer support. Also provided a point of liaison to raise student concerns with lecturers and other teaching staff. Provided study tips.
- Jun 1999 – Jun 2000 Queensland University of Technology Brisbane, Australia.
- **Faculty of Information Technology Equity Committee – Student Representative.**
  - Student representative on the equity committee. Raised student concerns to committee. Assisted committee resolve equity related issues, such as automatic door openers on lavatories for physically impaired faculty members.
- Jun 1999 – Jun 2000 Queensland University of Technology Brisbane, Australia.
- **Faculty of Information Technology Technical Services Management Committee – Student Representative.**
  - Student representative on the technical services management committee. Raised student concerns to committee. Assisted committee plan and deploy technical services projects, such as lab upgrades, hardware roll-over/decommission, etc.

## **REFEREES**

Please contact me for a list of referees