

NICHOLAS ARMSTRONG

SOFTWARE LEADER | MASC, EIT
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SUMMARY OF QUALIFICATIONS

- Experienced software leader with a record of solving complex engineering problems end-to-end – from the technology (multiple patents) to the real world (frequently visit customers)
- Focused on scaling – building teams, establishing engineering culture and processes, architecting products so that they can reliably support millions of users/devices, deploying to the cloud
- Expert knowledge of software development with emphasis in cloud services, mobile & web apps, networks, web application performance, and products that combine hardware and software
- Frequent coder – I like to get hands-on alongside my team. Recent: Docker, Angular, node.js, Power BI
- My personal software leadership runbook includes:
 - Leading architecture workshops to clarify the problems to solve and to share knowledge
 - Reducing complex systems to intuitive diagrams – often drawing “live” to create progress
 - Using data visualization tools to summarize progress or identify areas to improve
 - Documenting engineering principles and using them as the basis of 100% code review
 - Using high-fidelity prototypes to improve design and guide decision making
 - Planning for change and operations from the outset to minimize cost as the product evolves
 - Using or creating development tools to maximize forward progress and minimize error
- Deep knowledge of networks and their effect on application performance; my thesis work developed a technique for decreasing web page load times over mobile (3G/4G) connections
- Hobbyist cook, maker, curler, and avid learner

UNIVERSITY EDUCATION

MASTER OF APPLIED SCIENCE

MAY 2009 – SEP 2011

UNIVERSITY OF WATERLOO – ELECTRICAL AND COMPUTER ENGINEERING

- Thesis topic: *Accelerating the Mobile Web: Just-In-Time Push Prefetching*

BACHELOR OF APPLIED SCIENCE

SEP 2004 – APR 2009

UNIVERSITY OF WATERLOO – HONOURS COMPUTER ENGINEERING, WITH DISTINCTION - DEAN'S HONOURS LIST

AWARDS AND DISTINCTIONS

ALBERT SHERWOOD BARBER AWARD

JUNE 2009

FOR BEST OVERALL WORK TERM AND ACADEMIC PERFORMANCE

ROCKWELL AUTOMATION CANADA AWARD

MAY 2008 – AUG 2008

FOR BEST WORK TERM REPORT, 4TH YEAR COMPUTER ENGINEERING

GERRY HECKMAN SCHOLARSHIP

MAY 2008 – AUG 2008

FOR ACADEMIC PERFORMANCE AND EXTRACURRICULAR ACTIVITIES

BERNIE ROEHL AWARD
FOR ACADEMIC PERFORMANCE AND EXTRACURRICULAR ACTIVITIES

JAN 2007 – APR 2007

FACULTY OF ENGINEERING ENTRANCE SCHOLARSHIP
FOR ACADEMIC PERFORMANCE

SEP 2004 – DEC 2004

GOVERNOR GENERAL'S ACADEMIC MEDAL (BRONZE)
FOR HIGHEST AVERAGE UPON GRADUATION FROM A SECONDARY SCHOOL

JUNE 2004

WORK EXPERIENCE

DIRECTOR OF SOFTWARE
CARNEGIE TECHNOLOGIES

FEB 2016 – FEB 2020

- Led a global team to develop Carnegie's Network Convergence, Internet-of-Things (IoT), and Satellite platforms
- Founded engineering culture – wrote developer handbook and performance review rubrics, designed engineering systems (Gerrit, GitLab, JIRA, Jenkins), set code review standards, mentored developers and team leads
- Hands-on leadership: actively developed in JavaScript/TypeScript (node.js/React/Angular), Docker/Kubernetes, Java (Android), C# (.NET/WPF), and Power Query/DAX (Power BI/Excel)
- Travelled to support Carnegie's business activities, from conference presentations to on-site customer integrations

KEY ACHIEVEMENTS

- Established the technical hiring process and grew team from 5 to 34 (+50 contract), with low turnover
- Designed the software architecture for two greenfield products – SatBridge and Longview IoT – across native and hybrid mobile applications, scalable web services, and applications for embedded devices
- Drove the transformation of legacy analytics solution to a modern one based on Kubernetes and Kafka, with the capacity to process network measurements from 100M mobile apps into streaming KPIs accessible through Tableau
- Co-directed Kitchener office: build-out, IT systems, new employee onboarding, snacks and drinks, team building

VP ENGINEERING
LEAD PROGRAM MANAGER
PRAVALA NETWORKS (KITCHENER-WATERLOO, ONTARIO)

OCT 2012 – FEB 2016
MAY 2009 – OCT 2012

- Responsible for all engineering activities, from hiring and technical leadership to the design and implementation of Pravalas mobile and automotive products
- Manage customer projects, with responsibility for all project aspects including requirements, schedule, architecture, development, delivery, and customer relationship
- Code Pravalas horizontally-scalable policy management server (built with node.js and PostgreSQL), web management console (HTML5/LESS/backbone.js), and Android client interface (Java)
- Often support sales activities, present to customers, analyze competing products, and discuss product strategy
- Work directly with potential customers to demonstrate product capabilities and understand market needs

KEY ACHIEVEMENTS

- Represent Pravalas in engagements with OEMs, automotive Tier-1s, and major telcos in the United States, Malaysia, Japan, Hong Kong, Indonesia, and China
- Supported Pravalas's successful \$9.4m Automotive Supplier Innovation Program grant from the Government of Canada, including project definition and periodic project progress reports

PROGRAM MANAGER (PM) INTERN

SEP 2008 – DEC 2008

MICROSOFT CORPORATION (REDMOND, WASHINGTON)

- Managed the development of a WPF/Windows 7 sample application featuring multi-touch and ribbon integration for the 2008 Microsoft Professional Developer's Conference
- Created developer tools and documentation for photoSuru, the photo subscription sample application I developed in my previous term with Microsoft in preparation for its release
- Surveyed line-of-business (LOB) application frameworks available for WPF as part of an effort to develop a strategy for LOB applications on the Microsoft .NET client platform

KEY ACHIEVEMENTS

- Provided on-site support for the .NET Corporate VP's keynote demonstration of the WPF/Windows 7 sample to the 6,000 attendees present at PDC 2008
- Drove photoSuru's release to web (with full source code) at www.photosuru.com

SOFTWARE DESIGN ENGINEER (SDE) INTERN

JAN 2008 – APR 2008

MICROSOFT CORPORATION (REDMOND, WASHINGTON)

- Developed photoSuru, an occasionally-connected photo viewing application, to demonstrate the highly differentiated experiences developers can create using WPF
- Assisted the WPF test team in testing new features of WPF to identify bugs prior to the release of .NET 3.5 SP1
- Designed and developed 'photoSuru 360°', a version of our existing sample application optimized for the Microsoft Surface to test the adaptability of existing WPF applications by running them on Surface using the Surface SDK

KEY ACHIEVEMENTS

- Primary developer on photoSuru, a developer sample released by Microsoft in December 2008

SOFTWARE CONSULTANT

AUG 2006 – AUG 2007

SYSTEMGROUP, INC. (MISSISSAUGA, ONTARIO)

- Responsible for developing various solution components using a range of Microsoft technologies in cooperation with clients and other consultants
- Lead the development of a public website refresh for a not-for-profit organization by researching content management systems that would integrate with their existing infrastructure, developing the site based on their specifications, and deploying the website using DotNetNuke
- Supported the sales team by developing prototypes for potential clients using ASP.NET and CSS

KEY ACHIEVEMENTS

- Designed the user interface for a wealth management system developed for a large Ontario credit union

ADDITIONAL EXPERIENCE

MAKERCLUB VOLUNTEER

THEMUSEUM (KITCHENER-WATERLOO, ONTARIO)

OCT 2015 – PRESENT

(VOLUNTEER)

- Assist with monthly club for children as they learn maker skills - electronics, mechanics, art, repurposing, and more

ACADEMIC REPRESENTATIVE

FOR THE COMPUTER ENGINEERING CLASS OF 2009 (8 STREAM)

MAY 2006 – MAY 2009

(VOLUNTEER)

- Acted as a liaison between the Department of Electrical and Computer Engineering and the Computer Engineering class of 2009 (8 stream), providing feedback to improve the quality of the undergraduate program

MICROSOFT STUDENT PARTNER

FOR THE UNIVERSITY OF WATERLOO

SEP 2007 – DEC 2007

- Promoted Microsoft technologies and products to students on the University of Waterloo campus by sponsoring student-run events and hosting technical demonstrations

TECHNICAL DIRECTOR

UW ENGINEERING DRAMA PRODUCTION

JAN 2005 – APR 2007

(VOLUNTEER)

- Designed the sound and lighting layout for the Engineering Society Drama Production and supervised the tech crew

PDEng STUDENT REPRESENTATIVE

FOR THE COMPUTER ENGINEERING CLASS OF 2009 (8 STREAM)

MAY 2006 – AUG 2006

(VOLUNTEER)

- Acted as a liaison between the administrators of the PDEng program and the Computer Engineering class of 2009 (8 stream), providing feedback to improve the quality and value of the PDEng program

PROGRAM DEVELOPMENT

GREATER TORONTO AIRPORTS AUTHORITY (TORONTO, ONTARIO)

JAN 2006 – APR 2006

- Designed and developed a web application using ASP.NET/C# to tabulate training requirements and course completions for Facilities staff to ensure that all workers were up-to-date in their training and certifications

SOFTWARE DEVELOPMENT

HYDRO ONE NETWORKS, INC. (BARRIE, ONTARIO)

APR 2005 – SEP 2005

- Developed tools to monitor the performance of operations planning using Visual Basic and Microsoft Access

CERTIFICATIONS, MEMBERSHIPS, AND PATENTS

ENGINEER IN TRAINING, Professional Engineers Ontario

US PATENT #9860156, Accessing Local Network Resources in a Multi-Interface System

US PATENT #9769116, Encapsulating traffic while preserving packet characteristics

US PATENT #9838319, Encapsulation system featuring an intelligent network component

US PATENT #10212494, Method and system for monitoring physical assets

US PATENT #10242547, Method and system for monitoring livestock

RADIO OPERATOR'S CERTIFICATE (AERONAUTICAL), Industry Canada

THIS CV IS ALSO AVAILABLE AT www.nicholasarmstrong.com/portfolio