

Eric Shi

3A Mechatronics Engineering

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Telecommunications | Robotics | System Design | Mechanical Design

Technical Summary:

Software:

Proficient with: Java | C# | C/C++ | PLC Ladder Logic | Real Time Systems | Embedded Systems

Familiar with: Python | Assembly | VHDL | Bash | Scala

Hardware: Robotics | Microcontrollers | FPGA | Sensors and Actuators | Analog Circuit Design

Telecom: IP/MPLS | HSPA/LTE | IMS | WAN | OSI | Transport | Synchronization | Power Systems

Modeling: AutoCAD | NX Unigraphics | Solidworks | Finite Element Analysis

Web Technologies: JavaScript | HTML | PHP | ASP.NET | JSP, CSS, Apache, Tomcat

Frameworks: Spring | DaaS | Laravel | .NET 4.0 | JUnit | RESTful | Django | SOA

Tools/Utilities: Eclipse | Git | Visual Studio | MATLAB | WebLogic | Jira | Maven

RDBMS: SQL Server | MySQL | MS Access | Oracle DB

Equipment: Oscilloscope | Multimeter | Signal generator | Soldering | Machining

Operating Systems: Fluent with Ubuntu | Linux | UNIX | Windows

Professional Experience:

Inside Plant Engineering Co-op, TELUS Network Engineering & Design, Toronto, ON

Jan 2015 – May 2015

- **Network Core Engineering:** Project lead for remodelling regional and metro optical transport capacity management
 - 48 business day reduction per year for senior transport engineer, award in recognition of work from manager
 - Projected involved Circuit Vision, Ciena Optical Metro 3500/6500, Fujitsu Flashwave 4100/9500
- Issued WAN network engineering designs and network technician job packages for TELUS demand business customers
 - Work involved cabling, media converters, power equipment, synchronization, material procurement, scheduling operations and build team, and physical design of the network using tools such as NetCracker, Circuit Vision, and SAP
- Designed wall mounting mechanism for heavy power equipment in government buildings
- Created a centralized platform for real-time voice assurance involving tools such as RADCOM, Astellia, NetScout, and Geoprobe
- **Team Lead:** TELUS Innovation Center, Technology Strategy, Winter 2015 Co-op Team
 - Lead team of 7 in working on R&D projects for TELUS innovation center
 - Evaluated technology related to perceptual video QoE, augmented reality, glass, sales engineering, and framework
 - **Project Management:** Managed multiple projects using JIRA, held training session for JIRA to over 50 team members
- **National Initiatives:** National engineering and planning projects including sensitive record retention, process improvement, and a centralized web portal to share network diagrams and plant pictures nationally.
 - Received 2 TELUS awards on behalf of a total of 7 inside plant engineering managers nationally
 - Sensitive record retention framework standardized by Broadband Enablement Program Manager nationally
- Consultant for engineering harmonization in engineering and planning between TELUS central region, TELUS Quebec, TELUS Alberta, and TELUS BC
 - Received an award on behalf of TELUS Quebec engineering & planning (5 teams)

Employer Recommendations for this work term and previous work terms can be found on [LinkedIn here](#)

Technology Architect Co-op, TELUS Wireless Voice Activations Burnaby, British Columbia

May 2014 - Sept 2014

- Primary project was to introduce cloud storage bundled with security as a mobility product (successful launch in Oct. 2014)
- Resolved 10 year old reconciliation error (confirmed as of January 2015) on the service delivery framework, removed manual work and resolved one of the bugs that prevented mobile handsets from being activated at the TELUS store
- Implemented fix for 2 yearlong migration error stemming from an access point and virtual network configuration bug, estimated savings over \$20,000
- Designed and implemented a Java Spring MVC web application to automate brand acquisition into the voice activations systems

Award: Bravo award **Workshops:** Maven, Spring, Agile **TELUS Day of Giving:** Raised \$8,000 for charities through volunteer initiatives

Technology Architect Co-op, TELUS Wireless Voice Activations Burnaby, British Columbia

Sept 2013 - Jan 2014

- Wrote order simulator to mirror the complexity of the production network which can reach 200,000 orders a week
 - Java backend, Spring MVC web application, oracle databases, SQL
- Implemented RESTful web service to interface with Ericsson for IMS and LTE project

Developed a C# web application to monitor transportation fleet performance in real-time using GPS data, dispatcher data, and performance metrics for each individual truck operator.

Projects:

Hexapod Robot Mar 2015

- 24 degrees of freedom hexapod controlled using a PS2 controller, mechanical and electrical guide featured Lynxmotion

Droidworx Hexacopter with Hoverfly Mar 2015

- Features include altitude hold, ground station with first person view, GPS / return to home, 3-axis gimbal for camera stabilization

Work in progress: Diverse kill switch, dedicated camera controls, 3D printed dual barrel soft pellet guns

Web Controlled Robot Arm Mar 2015

- Dedicated power supply with DC-DC converter, several servo motors, web application and Perl script are used to control the arm

2015 - Other Electronic Projects Mar 2015

- Several small projects including IR barrier alarm, LED square audio spectrum analyzer, hands free quadcopter control mechanism, quadcopter bungee testing platform, XBee wireless control mini-robot tank

Space Invaders on the Keil RTX Microcontroller, University of Waterloo Project Nov 2014**Autonomous Arduino Fish Feeder** Aug 2014**Personal Website with Blog Engine** Aug 2014**Arduino Roaming Robot** Jul 2014**Autonomous Digital Micrometer, University of Waterloo Project** Mar 2014

- Digital Micrometer that measures accurately to a μm . Automated and interfaced with arduino. 7-Segment LED display for output.
Video: bit.ly/ZvOZKS

UWRobotics Team Sumo Robot Competition, UWRobotics Team Sep 2012 – Dec 2012

- Lightweight autonomous battle robot that can detect other robots using infrared sensors and push them off the stadium.

NXT Mindstorm Maze Solver, University of Waterloo Design Competition Nov 2012 – Dec 2012

- Solves any arbitrary maze and draws the shortest path through the maze, programmed with Robot C

Volunteer Experience:

Waterloo Engineering Society, Faculty of Engineering Teaching Award Council Member May 2015 - Present

- Elected by all engineering society executives and class representatives to run the application and review process for engineering professor awards and teaching assistant awards

Mechatronics Waterloo Engineering Society Representative Sept 2012 - Present

- Elected class representative for mechatronics to act in the in best interest of the student body to bridge communication between engineering faculty and society executives

BC Children's Hospital Miracle Weekend – TELUS Telethon Operator June 2014

- Collected over \$5,000 of phone pledges for the 27th annual Miracle Weekend.

Make-A-Wish Foundation – TELUS Car Wash June 2014

- Washed and dried cars at the TELUS Burnaby House, raised \$2,100 dollars

Equitas Human Rights – Vancouver Amazing Race June 2014

- Participated in the amazing race in down town Vancouver, raised \$400 to support Equitas's youth education programs

Volunteer – Professional Engineers of Ontario March 2014**Durham Asian Cultural Association Youth President** Jan 2010 - 2014

Education:

Candidate for Bachelor of Applied Sciences, **Mechatronics Engineering**, University of Waterloo Sep 2012 – Present

Interests:

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- Enjoy playing ice hockey, ultimate Frisbee, and Olympic weightlifting
 - Hobby electronics and building computers
 - Involved in health and fitness, nutrition, sports science, and health science
 - Fluent in many types of jazz styles playing the alto, tenor, and baritone saxophone
 - Video game enthusiast, former professional player