PATRICK LAVERTU FAIRBANK

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SUMMARY OF QUALIFICATIONS

- Leadership, communication and organizational skills refined through years of professional experience and FIRST Robotics Competition team involvement
- Six years of experience in professional software engineering
- Expertise in designing and scaling web services, distributed systems and databases
- Familiarity with control system design, embedded systems, sensors and manufacturing
- Over a decade of volunteer involvement mentoring FIRST Robotics Competition teams, earning numerous team and individual accolades

EDUCATION

University of Waterloo

Bachelor of Applied Sciences in Mechatronics Engineering   2006 – 2011

- Graduated with distinction and winner of the Sandford Fleming Award for Co-operative Proficiency
- Designed and built a self-balancing telepresence robot for final year design project

WORK & VOLUNTEER EXPERIENCE

Senior Software Engineer

LinkedIn Corp., Sunnyvale, CA   2015 – present

- Development of high-reliability systems that process customer payments and fulfill orders
- Focus on eliminating technical debt and streamlining the test and release processes

Tech Lead & Senior Software Engineer

Ooyala Inc., Mountain View / Santa Clara, CA   2013 – 2015

- Technical lead of the Transcoding and Ingestion team
- Designed and implemented distributed systems for ingesting and transcoding video content
- Introduced high standards for code quality and testing in the team's services
- Technologies: Ruby, FFmpeg, Cassandra, ZooKeeper, MySQL, Aspera, Chef

Software Engineer

Ooyala Inc., Mountain View, CA   2011 – 2013

- Stabilized and scaled the existing legacy transcoding system while working on a replacement design
- Created dashboards and metrics to track machine utilization and costs
- Focused on decreasing data center costs while maximizing processing speed; personally responsible for over $1M in annual cost savings
- Used FFmpeg to normalize video input, detect and correct encoding issues and optimize quality for streaming playback
- Technologies: C++, Ruby, RabbitMQ, Redis, FFmpeg, MySQL

Mentor/Coach

FIRST Robotics Competition   2006 – present

- Led several highly-successful high school teams in a competition comprising over 3000 teams worldwide
- 2012 – present: Team 254 "The Cheesy Poofs", San Jose, CA
  - Won 2014 World Championship and 8 regional events
- 2007 – 2011: Team 1503 "Spartonics", Niagara Falls, ON
  - Semifinalist at 2011 World Championship and won 2 regional events

- 2004 – 2006: Team 296 "Northern Knights", Montreal, QC
  - Won 2006 World Championship

Software Engineering Intern

Google Inc., Mountain View, CA   May – Aug. 2010

- Developed and maintained web services for Gmail related to extracting useful data from e-mail content
- Designed and implemented an administrative web console using Java and Google Web Toolkit
- Wrote a regression-testing utility to validate server releases using Python
- Worked extensively with Google's distributed storage and computing technologies

Software/Controls Engineering Intern

Patient Care Automation Services Inc., Oakville, ON   Sept. – Dec. 2009

- Managed the development and testing of robotic control software for a prescription-drug-dispensing kiosk
- Designed and optimized pick and place algorithms for decreasing dispense cycle time
- Implemented a system to manage inventory and optimize layout for the kiosk's configurable storage area
- Developed UI and backend features for the company's C# .NET operations support applications

Controls Engineering Intern

General Motors of Canada Limited - St. Catharines Powertrain, St. Catharines, ON   Jan. – Apr. 2009

- Developed control programs for V8 engine machining and assembly lines
- Investigated controls issues and made improvements to quality, cycle time and HMI usability
- Worked extensively with industrial controls technology including PLCs, Profibus devices and cameras

Software Engineering Intern

Google Inc., Mountain View, CA   May – Aug. 2008

- Developed and maintained Java/AJAX web services for rendering and cataloging OpenSocial gadgets
- Wrote unit tests and integration tests for web services using the JUnit framework
- Contributed to the open-source Apache Shindig project

Software Engineering Intern

Sony Creative Software Inc., Waterloo, ON   Sept. – Dec. 2007

- Implemented an XML-based UI skinning framework in C++ for Sony Media Go
- Created a customizable user interface, working with the Win32 API and Graphics Device Interface

AWARDS

- Mentor of the Year Award, VEX Robotics Competition, 2013
  - Awarded to a role model, a leader and an extraordinary mentor who helps show students new ways to expand their knowledge and solve problems in the worlds of STEM
- Woodie Flowers Finalist Award, Waterloo FIRST Robotics Regional Competition, 2010
  - Celebrates a mentor who leads, inspires and empowers students using excellent communication skills
- Governor General's Academic Bronze Medal, Loyola High School, 2004
  - Awarded to the top student of each high school graduating class in Canada

PERSONAL PROJECTS

- Cheesy Arena: A tournament and field management system for the FIRST Robotics Competition, written in Go
- Cheesy Parts: A web-based system for tracking the hierarchy and status of parts and assemblies through the manufacturing process, written in Ruby
- frclinks.com: A Google App Engine project which provides the FRC community with easy access to multiple sources of information using memorable URLs