BOB LITTEL

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Summary of Skills and Qualifications

- Reduce production cycle time for complicated automated systems through robotic path improvements and optimizing manufacturing process at Tesla
- Extensive knowledge of 6 axis industrial robots for the following brands:
  - KUKA, FANUC, ABB, STAUBLI, MOTOMAN, NATCHI/OTC, UNIVERSAL, KAWASAKI
- Extensive knowledge of 3D design in Solidworks, Mastercam
  - Taught Solidworks to university students while pursuing my Masters of Engineering
  - Taught Mastercam to contracted companies while working at In House Solutions
- Experience with Unix, and Linux through personal web development and hosting
- Programming Languages: Python, Matlab, C, Java, PHP, HTML, JavaScript, MySQL, AJAX
- Hands on experience with many common tools through home renovations, and hobbies
- Developed numerous offline robotic welding tools used for cell automation
- Work daily with KUKA robots for implementation of Spot Welding, SPR, Glue, Material Handling
- Use 3D engines to develop OCTOPUZ – an offline robotic programming suite
- Professional Engineer Ontario – PEO License Number 100234023

Work History

Tesla – Staff Manufacturing Controls Dev Engineer
Austin, Texas, USA
(Oct 2021 – Sept 2023)

- Automated checking off line robot programs to compare against the Tesla robot standard (Python)
- Approve, and validate safety designs for robotic systems (KUKA, FANUC) through virtual commissioning (Process Simulate) and physical integration
- Developed KUKA tech packages (KSS 8.6.6) for SpotWeld, SPR, Glue and TeslaCore which has been deployed to all Giga Tesla factories worldwide.
- Developed background tip dress code for optimum cycle time on KUKA robots and actively running in production for all pedestal welding robots
- Regular contributor to the Tesla Robotic Standard for programming

Tesla – Senior Manufacturing Controls Dev Engineer
Fremont, California, USA
(Feb 2019 – Oct 2021)

- Optimize cycle time for mass production of the Model Y. Reduce risk of possible downtime.
- Developed static analyzer for robot systems to detect robot programming structure errors and identify key areas for cycle time improvements. (Python)
- Automated robot backups for entire factory to centralized location (KUKA, Fanuc)
- Developed tech packages for KUKA (KSS 8.3.42) and Fanuc industrial robots to integrate with new hardware
- Create Robot Standards and best practices documentation for future robotic systems.
- Completed Robot Safety buyoffs for Tesla Shanghai, and Fremont Model Y

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OCTOPUZ – Senior Robotics Applications Engineer
Waterloo, Ontario, Canada (Sept 2017 – Feb 2019)

- Travel internationally to complicated robotics systems and integrate new features to core product.
- Develop custom applications for unique robot cells
- Work with management to define the release requirements for future software builds
- Prioritize backlog of bugs and features for development team.
- Setup new robots in the office for testing and debugging. (KUKA, Fanuc, Kawasaki, Universal)
- Setup external end of arm tooling for robots (weld torches, spindles), and external axis (KUKA)

OCTOPUZ / In House Solutions
Robotics Applications Engineering
Waterloo, Ontario, Canada (Apr 2014 – Sept 2017)

- Worked with KUKA, FANUC, ABB, MOTOMAN, MITSUBISHI, NATCHI/OTC industrial robots with applications such as Welding, Milling, Deburring, Waterjet, Plasma, Shot Peening, Pick and place.
- Create offline programming software OCTOPUZ used to program industrial robots (Python).
- Used JIRA, and Sourcetree for bug tracking and code commits
- Created custom software addons to support more difficult customer applications.
- Routinely used MasterCam to develop complicated 5 axis tool paths for robot applications.
- Trained external companies on how to use Mastercam, specifically for multiaxis robotic applications
- Demonstrate software to potential customers with custom in person presentations.

University of Guelph – Teaching Assistant –
Guelph, ON, Canada (Sept 2012 – Dec 2013)

- Teaching Assistant for ENGG*3450 Electrical Devices – A 3rd year engineering course designed to teach students the fundamentals of electric circuit design and how to use common electrical devices.
- Teaching Assistant for ENGG*1500 Engineering Analysis – A 1st year engineering course teaching students about linear systems, matrix algebra, vector spaces and computing techniques.

Education

Masters of Applied Science (MASc), *Engineering Systems and Computing*
University of Guelph, Ontario, Canada (Sept 2011 – Jan 2014)

- Thesis title: "Neural Network Compound Predictor for Spirits in an Electronic Nose"
  - Custom neural network designed to classify unknown chemical samples in MATLAB
  - Extensive sample collection methods developed and analyzed
- Relevant Courses: Soft Computing, Advanced Control Systems, Advanced Digital Signal Processing, Analog Integrated Circuit Design

Bachelor of Engineering, *Engineering Systems and Computing, Co-op*
University of Guelph, Ontario, Canada (2006 - 2011)