JASPER ROLAND

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KEY COMPETENCIES

- Biomedical engineer with experience designing, performing and analyzing mechanical experiments, and designing and fabricating novel test apparatus using 3D CAD modelling, machine shop tools and rapid prototyping techniques.
- Experienced with computer coding in multiple languages including MatLab, Python, C++, HTML5, JavaScript and ImageJ Macro for analyzing and presenting large datasets.
- Successful track record of collaborating with international and interdisciplinary teams to develop computational models and detailed experimental validation

EDUCATION

PhD in Biomedical Engineering *2013-2018*
University of British Columbia

Master of Applied Science in Mechanical Engineering *2010 -2012*
University of British Columbia

Bachelor of Science in Mechanical Engineering *2006-2010*
University of Wyoming

CAREER HIGHLIGHTS

Orthopaedic Engineering Consultant 2016-2018
University of British Columbia

- Developed image scaling software in MatLab and ImageJ to identify, mark and scale landmarks on over 1500 images at an average of 30 seconds/image
- Trained orthopaedic surgeons and residents to align images and make distance and angle measurements.

Doctoral Researcher 2013-2018
University of British Columbia

- Developed a novel technique to test isolated hip bones in physiological falls utilizing two protocols, six high speed cameras and 17 data signals.
- Collaborated with computational modellers in Canada and Switzerland to validate finite-element models of mechanical fracture tests.
- Designed, wrote and validated a C++ algorithm for strain measurement in bone

Engineering Intern 2017
Zimmer GmbH, Switzerland

- During a 6 month internship position, developed a protocol for cartilage friction testing which included harvesting, preparation, storage, and testing of cartilage specimens.
- Designed and constructed a cartilage friction testing machine capable of measuring friction coefficients of 0.01 under physiological loads.