Samuel de Jong

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Summary

Through six years of graduate school education and research, I have developed skills in:

- Creative problem solving and experimental design
- Developing detector systems and software to acquire and analyze data
- Quantitative analysis of large data sets
- Producing data visualizations using matplotlib and ROOT
- Programming and scripting with C++, python, and bash
- Collaborating with colleagues locally and internationally
- Presenting results at conferences and collaboration meetings
- Writing technical and academic documents

Experience

PhD Researcher, University of Victoria — Jan 2013 - May 2016

Designed, assembled, and commissioned thermal neutron detector system using tubes of helium-3 for the Belle II experiment. Developed and tested data acquisition system for helium-3 tubes. Oversaw deployment and operation of this detector system in Japan, and analyzed data recorded by them. Calibrated helium-3 tubes at UVic. Simulated helium-3 tubes and neutron source

MSc Researcher, University of Victoria — Sept 2010 - Aug 2012

Investigated a new technique in particle identification in gaseous detectors. Developed and tested algorithms to implement this new technique.

Laboratory Instructor, University of Victoria — Sept 2010 - Apr 2016

Instructed undergraduate students on proper laboratory technique and equipment use. Taught experiments in introductory physics, electricity and magnetism, and laboratory electronics. Evaluated student progress and graded lab reports.

Education

Doctorate in High Energy Physics, **University of Victoria** — May 2017
Thesis: "Thermal Neutrons in Phase I of Belle II Commissioning"
Advisor: Prof. Michael Roney

Masters of Science in High Energy Physics, **University of Victoria** — August 2012
Thesis: "Cluster Counting Studies in a SuperB Drift Chamber Prototype"
Advisor: Prof. Michael Roney

Bachelor of Science in Applied Physics with Mathematics minor, **Carleton University** — December 2009

Skills

Computing

Advanced Knowledge	C++, python, ROOT, Linux, Object Oriented Programming
Intermediate Knowledge	GEANT4, java, Excel, EPICS, Windows, ubuntu, SL6, bash, LaTeX, svn, git, Virtual Machines, jupyter, xml, Confluence, verilog
Basic Knowledge	html, MATLAB, matplotlib, SQL, mathematica

Hardware

Expertise in	Detector development, DAQ software development
Equipment	CAEN, VME, NIM, Digitizers, Computer-Electronics interfaces, Power supplies, FPGA

Other

Particle Physics, Data analysis, Statistics, Public speaking, Problem solving, Collaborative research, Teaching

Conferences and Presentations

During my PhD studies, I travelled to the KEK lab in Tsukuba, Japan for meetings of the Belle II collaboration on five separate occasions, and presented remotely many other times. At these meetings, I presented the status of the project that I had been working on to colleagues and answered questions about my project.

Oral Presentation, Canadian Association of Physics Annual Congress (Ottawa, ON) 2016
Presented results of experiments conducted at the KEK physics lab in Tsukuba, Japan.

Oral Presentation, Winter Nuclear and Particle Physics Conference (Montreal, QC) 2012
Presented results of experiments conducted at the TRIUMF physics lab in Vancouver, BC.

Oral Presentation, Canadian Association of Physics Annual Congress (Calgary AB) 2012
Presented results of experiments conducted at the TRIUMF physics lab in Vancouver, BC.

Poster Presentation, University of Victoria (Victoria BC) 2011
Presented an introduction to the SuperB experiment.

Oral Presentation, Canadian Undergraduate Physics Conference (Edmonton AB) 2009
Presented a summary of studies I had done for my BSc Honours project.

Field work

TRIUMF, Vancouver, Canada: Prototype drift chamber at M11 2011
Performed shift work for recording data, adjusted beam settings to produce different particle momenta, changed the position of the prototype chamber, problem solved issues with the experiment

KEK, Tsukuba, Japan: BEAST II Phase I 2016
Installed helium-3 tubes in the SuperKEKB commissioning detector, BEAST II. Performed data acquisition shifts, attended accelerator meetings, problem solved issues with the experiment

Publications

First Measurements of Beam Backgrounds at SuperKEKB 2017
Vahsen, S., et al.

Improved particle identification using cluster counting in a full-length drift chamber prototype 2014
Caron, J.-F., Hearty, C., Lu, P., So, R., Cheaib, R., Martin, J.-P., Faszer, W., **de Jong, S.**, Beaulieu, A., Roney, M., de Sangro, R., Felici, G., Finocchiaro, G., and Piccolo, M.

SuperB Technical Design Report 2013
Baszczyk, M., et al.

Prospects for Observing the Standard Model Higgs Boson Decaying into $b\bar{b}$ Final States Produced in Weak Boson Fusion with an Associated Photon at the LHC 2010
Asner, D.M., Cunningham, M., **de Jong, S.**, Randrianarivony, K., and Santamarina, C.

Interests and Activities

Professional: Problem solving, Data analysis, Programming, Data acquisition systems, Hardware-software interface, Physics, Experimentation, Detector development, Simulation of detector systems, Research and development
Personal: Photography, Science Fiction, Travel