

## Education

2016/09 – Present	<b>PhD Computing, Queen's University</b> <ul style="list-style-type: none"><li>Supervisor: Randy Ellis</li></ul>	Expected to defend: April 2020
2014/09 – 2016/08	<b>MSc Computing, Queen's University</b> <ul style="list-style-type: none"><li>Supervisor: Randy Ellis</li></ul>	Promoted to PhD
2010/09 – 2014/04	<b>BScH Mathematical Physics, Queen's University</b> <ul style="list-style-type: none"><li>Received the undergraduate medal in mathematical physics at graduation</li></ul>	GPA: 4.15/4.3

---

## Publications

### Journal Articles

- J1 **J. J. Peoples**, G. Bisleri, and R. E. Ellis: Deformable multimodal registration for navigation in beating-heart cardiac surgery. *International Journal of Computer Assisted Radiology and Surgery*, 2019. (doi: [10.1007/s11548-019-01932-2](https://doi.org/10.1007/s11548-019-01932-2)<sup>1</sup>)

### Refereed Conference Papers

- C1 **J. J. Peoples** and R. E. Ellis: A Generalizable Framework for Domain-Specific Nonrigid Registration: Application to Cardiac Ultrasound. In *Proceedings of the IEEE International Symposium on Biomedical Imaging (in press)*, 2020.

### Refereed Abstracts

- A2 M. S. Hefny, **J. J. Peoples**, M. L. Zec, D. R. Pichora, and R. E. Ellis: Topologically consistent triangulation for computer assisted surgery planning. In *CARS 2016, International Journal of Computer Assisted Surgery (Suppl 1)*, 2016.
- A1 M. S. Hefny, **J. J. Peoples**, M. L. Zec, D. R. Pichora, and R. E. Ellis: Atlas-based scaphoid fixation planning. In *Proceedings of the Annual Meetings of CAOS-International*, 2016.

### Preprints

- Pr1 K. Cannon, C. Hanna, and **J. Peoples**: Likelihood-ratio ranking statistic for compact binary coalescence candidates with rate estimation. *arXiv preprint arXiv:1504.04632*, 2015.
- 

## Research Experience

2016/09 – Present	<b>Graduate Researcher (PhD), Queen's University</b> <ul style="list-style-type: none"><li>Research on nonrigid point set registration toward doctoral thesis</li></ul> <b>Selected Projects</b> <ul style="list-style-type: none"><li><b>Point Set Registration</b><ul style="list-style-type: none"><li>Developed novel algorithms for point set registration using state-of-the-art statistical methods</li><li>Implemented custom software using MATLAB, Python/TensorFlow and C++</li><li>Designed and conducted experiments for validation and testing of robustness</li></ul></li><li><b>Cardiac Image Registration</b><ul style="list-style-type: none"><li>Developed a novel method of aligning intraoperative ultrasound and preoperative CT cardiac images</li><li>Implemented custom software in MATLAB and C++ to do the registration and analysis</li><li>Helped supervise and oversaw the onboarding of two undergraduate researchers</li></ul></li></ul>
2014/09 – 2016/08	<b>Graduate Researcher (Master's), Queen's University</b> <ul style="list-style-type: none"><li>Research on 3D mesh processing and statistical shape modeling toward Master's thesis</li></ul> <b>Selected Projects</b> <ul style="list-style-type: none"><li><b>Preprocessing 3D Mesh Geometry</b></li></ul>

---

<sup>1</sup><https://doi.org/10.1007/s11548-019-01932-2>

- Developed novel meshing algorithms to prepare data for an in-house statistical shape modeling algorithm
  - Implemented custom software in MATLAB and C++ to process 3D data
  - **Study of Wrist Surgery Planning**
    - Oversaw clinician participants as they completed drill plans to be analyzed in the study
    - Conducted preprocessing on data with custom software and novel algorithms
- 2015/10 – 2016/01 **Special Research Student, Nara Institute of Science and Technology**
- Research on statistical shape modeling of the liver using then state-of-the-art methods
  - Provided a seminar to hosting research group on shape modeling methods
- 2013/05 – 2013/08 **Summer Undergraduate Researcher, Canadian Institute for Theoretical Astrophysics**
- Research and software development in Python as part of the LIGO Scientific Collaboration

## Teaching Experience

- 2018 Winter **Teaching Fellow, Queen's University**, Discrete Mathematics for Computing I(CISC102)
- Sole instructor of mandatory first year computer science course with over 100 students
  - Responsible for lectures, office hours, and all other course materials
  - Worked with students requiring special accommodations to ensure all needs were met
  - Managed a team of teaching assistants to aid with grading and office hours
- 2017 Winter **Guest Lecturer, Queen's University**, Continuous Coordinate Transformations(CISC881)
- Provided 3 lectures on differential geometry (2017/01/14, 2017/01/16, 2017/03/28)
- 2016 Fall, 2014 Fall **Teaching Assistant, Queen's University**, Discrete Mathematics for Computing I(CISC102)
- Held office hours, graded and proctored tests, edited and suggested problems for exams
- 2015 Fall **Teaching Assistant, Queen's University**, Logic for Computing Science(CISC204)
- Lead group tutorial sessions, graded and proctored tests

## Awards and Honours

### Research Scholarships

- 2017/09 – Present **NSERC PGS-D**, CAD 21,000 per annum
- 2015/05 – 2016/04 **NSERC Alexander G. Bell CGS-M**, CAD 17,500
- 2016/09 – 2017/08 **Queen Elizabeth II Graduate Scholarship in Science and Technology**, CAD 15,000
- 2015/11 – 2016/01 **JASSO Student Exchange Support Program for Short Term Study in Japan**
- 2013/05 – 2013/08 **NSERC Undergraduate Summer Research Award**

### Undergraduate Awards

*All awards listed below were awarded by Queen's University*

- 2010 Principal's Scholarship
- 2011 Dean's Honour List with Distinction, William Coombs Baker Memorial Prize, Day Prize in Physics and Mathematics, Annie Bentley Lillie Prize in First Year Calculus, Principal's Scholarship
- 2012 Dean's Honour List with Distinction, Susan Near Prize in Mathematics, Susan Near Prize in Physics, Dora and Beatrice Helmkey Scholarship in Mathematics
- 2013 Dean's Honour List, Nellie and Ralph Jeffery Award in Mathematics
- 2014 Medal in Mathematical Physics, Dean's Honour List

## Conference Presentations

### Talks

- T2 **J. J. Peoples**, G. Bisleri, and R. E. Ellis: Deformable Multi-Modal Registration for Navigation in Beating-Heart Cardiac Surgery. Presented at IPCAI 2019, Rennes, France, by J. J. Peoples, 2019/06/19 ([video](#)<sup>2</sup>)
- Chosen by audience vote after short talk given previous day
- T1 **J. J. Peoples**, G. Bisleri, and R. E. Ellis: Deformable Multi-Modal Registration for Navigation in Beating-Heart Cardiac Surgery. Presented at IPCAI 2019, Rennes, France, by J. J. Peoples, 2019/06/18 ([video](#)<sup>3</sup>)

<sup>2</sup><http://medialibrary.cars2019.org/mediatheque/media.aspx?mediaId=70854&channel=70776>

<sup>3</sup><http://medialibrary.cars2019.org/mediatheque/media.aspx?mediaId=70821&channel=70776>

Posters

- P1     **J. J. Peoples**, G. Bisleri, and R. E. Ellis: Deformable Multi-Modal Registration for Navigation in Beating-Heart Cardiac Surgery. Presented at IPCAI 2019, Rennes, France, by J. J. Peoples, 2019/06/18 to 2019/06/19