

## Education

- 2016 – 2020      **PhD Computing, Queen's University**
- Supervisor: Randy Ellis
  - Thesis: Composition of Transformations in Feature-Based Registration
- 2014 – 2016      **MSc Computing, Queen's University**      Promoted to PhD
- Supervisor: Randy Ellis
- 2010 – 2014      **BScH Mathematical Physics, Queen's University**      GPA: 4.15/4.3
- Received the undergraduate medal in mathematical physics at graduation
- 

## Publications

### Journal Articles

- J3      N. Horvat, J. Miranda, M. E. Homs, **J. J. Peoples**, N. M. Long, A. L. Simpson, and R. K. G. Do: A primer on texture analysis in abdominal radiology. *Abdominal Radiology*, 2021. ([doi:10.1007/s00261-021-03359-3](https://doi.org/10.1007/s00261-021-03359-3)<sup>1</sup>)
- J2      K. Scott, D. Stuart, **J. Peoples**, G. Bisleri, and R. Ellis: Efficient Automatic 2D/3D Registration of Cardiac Ultrasound and CT Images. *Computer Methods in Biomechanics and Biomedical Engineering: Imaging & Visualization*, 2020. ([doi:10.1080/21681163.2020.1835555](https://doi.org/10.1080/21681163.2020.1835555)<sup>2</sup>)
- 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>3</sup>)

### Refereed Conference Papers

- C2      **J. J. Peoples** and R. E. Ellis: Composition of Transformations in the Registration of Sets of Points or Oriented Points. In *ShapeMI 2020: Shape in Medical Imaging*, 2020. ([doi:10.1007/978-3-030-61056-2\\_1](https://doi.org/10.1007/978-3-030-61056-2_1)<sup>4</sup>)
- C1      **J. Peoples** and R. Ellis: A Generalizable Framework for Domain-Specific Nonrigid Registration: Application to Cardiac Ultrasound. In *2020 IEEE 17th International Symposium on Biomedical Imaging (ISBI)*, 2020. ([doi:10.1109/ISBI45749.2020.9098434](https://doi.org/10.1109/ISBI45749.2020.9098434)<sup>5</sup>)

### 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

- 2020/09 – Present      **Post-doctoral Fellow, Queen's University**
- Conducting research on machine learning and radiomics applied to various clinical datasets and projects
  - Helping supervise and guide student research projects
- 2020/06 – 2020/08      **Research Assistant, Queen's University**
- Early stage research into application of deep learning to brain tumour detection
  - Helping to design patient specific surgical guides for the spine

---

<sup>1</sup><https://doi.org/10.1007/s00261-021-03359-3>

<sup>2</sup><https://doi.org/10.1080/21681163.2020.1835555>

<sup>3</sup><https://doi.org/10.1007/s11548-019-01932-2>

<sup>4</sup>[https://doi.org/10.1007/978-3-030-61056-2\\_1](https://doi.org/10.1007/978-3-030-61056-2_1)

<sup>5</sup><https://doi.org/10.1109/ISBI45749.2020.9098434>

2016/09 – 2020/04	<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 oversee 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> <ul style="list-style-type: none"> <li>Developed novel meshing algorithms to prepare data for an in-house statistical shape modeling algorithm</li> <li>Implemented custom software in MATLAB and C++ to process 3D data</li> </ul> </li> <li><b>Study of Wrist Surgery Planning</b> <ul style="list-style-type: none"> <li>Oversaw clinician participants as they completed drill plans to be analyzed in the study</li> <li>Conducted preprocessing on data with custom software and novel algorithms</li> </ul> </li> </ul>
2015/10 – 2016/01	<b>Special Research Student, Nara Institute of Science and Technology</b> <ul style="list-style-type: none"> <li>Research on statistical shape modeling of the liver using then state-of-the-art methods</li> <li>Provided a seminar to hosting research group on shape modeling methods</li> </ul>
2013/05 – 2013/08	<b>Summer Undergraduate Researcher, Canadian Institute for Theoretical Astrophysics</b> <ul style="list-style-type: none"> <li>Research and software development in Python as part of the LIGO Scientific Collaboration</li> </ul>

## Teaching Experience

2018 Winter	<b>Teaching Fellow, Queen's University</b> , Discrete Mathematics for Computing I (CISC102) <ul style="list-style-type: none"> <li>Sole instructor of mandatory first year computer science course with over 100 students</li> <li>Responsible for lectures, office hours, and all other course materials</li> <li>Worked with students requiring special accommodations to ensure all needs were met</li> <li>Managed a team of teaching assistants to aid with grading and office hours</li> </ul>
2017 Winter	<b>Guest Lecturer, Queen's University</b> , Continuous Coordinate Transformations (CISC881) <ul style="list-style-type: none"> <li>Provided 3 lectures on differential geometry (2017/01/14, 2017/01/16, 2017/03/28)</li> </ul>
2016 Fall, 2014 Fall	<b>Teaching Assistant, Queen's University</b> , Discrete Mathematics for Computing I (CISC102) <ul style="list-style-type: none"> <li>Held office hours, graded and proctored tests, edited and suggested problems for exams</li> </ul>
2015 Fall	<b>Teaching Assistant, Queen's University</b> , Logic for Computing Science (CISC204) <ul style="list-style-type: none"> <li>Lead group tutorial sessions, graded and proctored tests</li> </ul>

## Awards and Honours

### Research Scholarships

2017/09 – 2020/08	<b>NSERC PGS-D</b> , CAD 21,000 per annum
2015/05 – 2016/04	<b>NSERC Alexander G. Bell CGS-M</b> , CAD 17,500
2016/09 – 2017/08	<b>Queen Elizabeth II Graduate Scholarship in Science and Technology</b> , CAD 15,000
2015/11 – 2016/01	<b>JASSO Student Exchange Support Program for Short Term Study in Japan</b>
2013/05 – 2013/08	<b>NSERC Undergraduate Summer Research Award</b>

### Undergraduate Awards

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

2014	Medal in Mathematical Physics, Dean's Honour List
2013	Dean's Honour List, Nellie and Ralph Jeffery Award in Mathematics
2012	Dean's Honour List with Distinction, Susan Near Prize in Mathematics, Susan Near Prize in Physics, Dora and Beatrice Helmky Scholarship in Mathematics
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
2010	Principal's Scholarship

---

## Conference Presentations

### Talks

- T3 **J. J. Peoples** and R. E. Ellis: Composition of Transformations in the Registration of Sets of Points or Oriented Points. Presented at ShapeMI MICCAI 2020, (Remote), 2020/10/04
- 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>6</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>7</sup>)

### 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

---

<sup>6</sup><http://medialibrary.cars2019.org/mediatheque/media.aspx?mediaId=70854&channel=70776>

<sup>7</sup><http://medialibrary.cars2019.org/mediatheque/media.aspx?mediaId=70821&channel=70776>