

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
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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)¹)

Refereed Conference Papers

- 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)²)

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.
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Research Experience

- 2016/09 – 2020/04 **Graduate Researcher (PhD), Queen's University**
- Research on nonrigid point set registration toward doctoral thesis
- Selected Projects
- **Point Set Registration**
 - Developed novel algorithms for point set registration using state-of-the-art statistical methods
 - Implemented custom software using MATLAB, Python/TensorFlow and C++
 - Designed and conducted experiments for validation and testing of robustness
 - **Cardiac Image Registration**
 - Developed a novel method of aligning intraoperative ultrasound and preoperative CT cardiac images
 - Implemented custom software in MATLAB and C++ to do the registration and analysis
 - Helped supervise and oversaw the onboarding of two undergraduate researchers
- 2014/09 – 2016/08 **Graduate Researcher (Master's), Queen's University**
- Research on 3D mesh processing and statistical shape modeling toward Master's thesis
- Selected Projects

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

²<https://doi.org/10.1109/ISBI45749.2020.9098434>

- **Preprocessing 3D Mesh Geometry**
 - 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

- 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 Helmkay 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

- 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](#)³)
- 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

³<http://medialibrary.cars2019.org/mediatheque/media.aspx?mediaId=70854&channel=70776>

Cardiac Surgery. Presented at IPCAI 2019, Rennes, France, by J. J. Peoples, 2019/06/18 ([video](#)⁴)

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

⁴<http://medialibrary.cars2019.org/mediatheque/media.aspx?mediaId=70821&channel=70776>