

Brian G. Booth, Ph.D.

imec - Vision Lab, University of Antwerp (CDE)
Universiteitsplein 1, Building N, B-2610 Antwerp, Belgium
+32 (0) 3 265 24 72, brian.booth@uantwerpen.be

Experienced researcher in data science with a specific focus on applications to visual problems in medical imaging, biomechanics, and industry. An effective communicator with years of experience in teaching, student supervision, as well as industrial and interdisciplinary collaboration.

EXPERIENCE *Research Manager - Shape Modelling Group, 2018-present*
imec-Vision Lab, Dept. of Physics, University of Antwerp

- Managing three PhD students and three industry-linked research projects in areas of shape modelling, statistical analysis, and machine learning.

Postdoctoral Researcher, 2016-2017
imec-Vision Lab, Dept. of Physics, University of Antwerp

- Industry-linked research into computer-aided diagnosis of foot abnormalities as well as automated design and 3D printing of foot orthotic devices.

EDUCATION *Doctor of Philosophy (PhD), Computing Science*
Simon Fraser University (SFU), Burnaby, BC, Canada
Awarded February 2016
Supervisor: Dr. Ghassan Hamarneh
Thesis Title: Diffusion MRI Analysis Techniques Inspired by the Preterm Infant Brain (<http://summit.sfu.ca/item/15777>)

Master of Science (MSc), Computing Science
University of Alberta, Edmonton, AB, Canada
Awarded June 2008
Supervisor: Dr. Xiaobo Li
Thesis Title: Focusing on the Medium: An Alternative Approach to Ultrasound Image Segmentation

Bachelor of Science (BSc), Computing Science - Industrial Internship Program
University of Alberta, Edmonton, AB, Canada
Industrial Internship Host: Red Hat (Toronto, Canada)
Awarded June 2005 with Distinction

PUBLICATION RECORD Author or co-author of 24 peer-reviewed publications, including 7 journal articles. Since 2014, these works have received 244 citations, resulting in an author h-index of 7 and an i10-index of 3 (courtesy of Google Scholar). Additionally authored or co-authored 3 book chapters, 11 abstracts, 9 software packages, and curated 2 open-access datasets.

A full publication record accompanies this application.

SELECTED PUBLICATIONS

Brian G. Booth, Noël L.W. Keijsers, Jan Sijbers, Toon Huysmans. “STAPP: SpatioTemporal Analysis of Plantar Pressure Measurements using Statistical Parametric Mapping”, *Gait & Posture*, Vol 63, 2018, pp. 268-275. **Impact Factor:** 2.414 (2018), **Citations:** 9.
- *Spatiotemporal extension to statistical parametric mapping.*

Brian G. Booth, Steven P. Miller, Colin J. Brown, Kenneth J. Poskitt, Vann Chau, Ruth E. Grunau, Anne R. Synnes, and Ghassan Hamarneh. “STEAM - Statistical Template Estimation for Abnormality Mapping: a Personalized DTI Analysis Technique with Applications to the Screening of Preterm Infants”, *NeuroImage*, Vol. 125, 2016, pp. 705-723. **Impact Factor:** 5.812 (2018), **Citations:** 6.
- *Statistical modelling of large image datasets.*

Jeremy Kawahara, Colin J. Brown, Steven P. Miller, Brian G. Booth, Vann Chau, Ruth E. Grunau, Jill G. Zwicker, and Ghassan Hamarneh. “BrainNetCNN: Convolutional Neural Networks for Brain Networks; Towards Predicting Neurodevelopment”, *NeuroImage*, Vol. 146, 2017, pp. 1038-1049. **Impact Factor:** 5.812 (2018), **Citations:** 82.
- *Co-supervision of high-impact graph-based deep learning work.*

Brian G. Booth and Ghassan Hamarneh. “Consistent Information Content Estimation for Diffusion Tensor MR Images,” in *Proceedings of 1st IEEE Conference on Healthcare Informatics, Imaging and Systems Biology (HISB)*, July 2011, pp. 166-173. **IEEE Best Paper Award**, **Citations:** 6.
- *Extension of information content estimation to tensor sets.*

Brian G. Booth, Jan Sijbers, and Toon Huysmans. “A Machine Learning Approach to the Design of Customized Shoe Lasts”, in *Proceedings of the 14th Annual Footwear Biomechanics Symposium, Footwear Science*, Vol. 11:sup1, pp. S17-S19, August 2019. **Citations:** 1.
- *Industrial application of neural networks and mesh processing.*

INDUSTRIAL COLLABORATIONS

Manager of the imec-Vision Lab’s contributions to 5 large-scale industry-linked research projects, namely:

MEFISTO: Meniscal Functionalized Scaffold to Prevent Knee Osteoarthritis Onset after Meniscectomy, EU Horizon 2020, 2019-2024. *Industry Partners:* Active Implants, Geistlich Biomaterials, Tissue Click Ltd., Orthokey Italia. <https://www.mefisto-project.eu/>

CAD WALK: Enabling Computer Aided Diagnosis of Foot Pathologies through the use of Metric Learning, EU Horizon 2020, 2017-2019. *Industry Partners:* RS Scan International. <http://cadwalk.eu>

DIASTOLE: Dynamic imaging for segmentation and computational modelling of the heart, imec Belgium, 2017-2019. *Industry Partners:* GE Healthcare, Materialise, Feops. <https://www.imec-int.com/en/what-we-offer/icon-portfolio/diastole>

PLATO: Knowledge and technology platform for customized design and 3D printing of orthoses, IWT Belgium, 2016-2019.

Industry Partners: Vigo Orthopaedics, Orfit Industries.

FootWork: Automation and innovation for quality assurance in choice, design and fabrication of orthopaedic shoes and corrective insoles, imec Belgium, 2016-2017.

Industry Partners: RS Scan International, Orthopedie De Prêtre.

<https://www.imec-int.com/en/what-we-offer/research-portfolio/footwork>

INVITED TALKS “Innovative Analysis Techniques of Pressure Data”, presented at the InForMed Annual Meeting, January 2018.

“CAD WALK: Computer-Aided Diagnosis of Foot Problems using Metric Learning”, presented at the EGAMI Annual Workshop, October, 2017.

“Spatio-temporal Analysis of Connectivity Patterns for White Matter Injury Detection in the Preterm Infant Brain”, presented at Geometry for Anatomy Workshop, Banff International Research Station (BIRS), August, 2011.

**SELECTED
GRANTS, AWARDS,
AND HONORS**

International Level:

- Marie Curie Individual Fellowship, 2016 (<http://cadwalk.eu>) (160k EUR, **15.4% success rate**).
- IEEE Best Paper Award, Conference on Healthcare Informatics, Imaging, and Systems Biology (HISB), July 2011 (700 USD).
- Foreign Government Research Travel Award - France, 2010 (12k EUR, **one of only 3 awarded**).

National Level (Canada):

- IODE War Memorial Scholarship, 2012 (15k CAD, **5.5% success rate**).
- NSERC Postgraduate Scholarship - Doctoral, 2010 (42k CAD, 27% success rate).
- NSERC Postgraduate Scholarship - Masters, 2006 (36k CAD, 30.7% success rate).

Provincial Level:

- Sir James Lougheed Award of Distinction, 2012, (20k CAD).
- Pacific Century Graduate Scholarship, 2008 (12k CAD).
- iCORE Graduate Student Award, 2006 (12k CAD).
- Alberta Heritage Graduate Student Scholarship, 2006 (2k CAD).

Institution Level:

- SFU Applied Sciences Teaching Assistant Excellence Award, 2015.
- SFU Graduate Fellowship, 2009 and 2011 (6k CAD).
- SFU President’s Research Stipend, 2011 (6k CAD).
- SFU Special Graduate Entrance Scholarship, 2008 (7k CAD).
- Walter H. Johns Graduate Fellowship, 2006 (4k CAD).

TEACHING EXPERIENCE

Sessional Lecturer:

- Operating Systems (CMPT 300), Simon Fraser University, Fall 2015.

Teaching Assistant (i.e. lab instruction and marking):

- Digital Signal and Image Processing (2001WETDSB), University of Antwerp, Spring 2017.
- Introduction to Computer Design (CMPT 150), Simon Fraser University, Spring 2015 (**Received Departmental Teaching Assistant Award of Excellence**).
- Introduction to Computer Design (CMPT 150), Simon Fraser University, Fall 2014.
- Scientific Computer Programming (CMPT 102), Simon Fraser University, Fall 2014.
- Technical Writing & Group Dynamics (CMPT 376W), Simon Fraser University, Spring 2014.
- Operating Systems (CMPT 300), Simon Fraser University, Fall 2008.
- Reinforcement Learning (CMPUT 499/609), University of Alberta, Winter 2007, *Graduate Level Course*.
- Reinforcement Learning (CMPUT 499/609), University of Alberta, Winter 2006, *Graduate Level Course*.
- Practical Programming Methodology (CMPUT 201), University of Alberta, Fall 2005 (**Nominated for Departmental Teaching Assistant Award of Excellence**).

SUPERVISORY EXPERIENCE

Postdoctoral Researchers:

- Kenan Niu, "4D parametric shape and motion modelling of the heart", imec-Vision Lab, Department of Physics, University of Antwerp (2018-2019).

Doctoral Students:

- Jonas Grammens, "Morphological profiling of Patients Undergoing Meniscal Removal", imec-Vision Lab, Department of Physics, University of Antwerp (2019-present).
- Jeroen Van Houtte, "3D deformable motion reconstruction from fluoroscopy images based on articulating statistical shape and intensity models", imec-Vision Lab, Department of Physics, University of Antwerp (2018-present).
- Kristina Stanković, "Statistical Shape Modeling and its Applications to Human Limbs", imec-Vision Lab, Department of Physics, University of Antwerp (2016-present).
- Colin J. Brown, "Modelling and Prediction of Neurodevelopment in Preterm Infants using Structural Connectome Data", School of Computing Science, Simon Fraser University (2012-2018).

Masters Students

- Ruben Gysemans, "Articulation-based Registration of 3D optical scans of hands", imec-Vision Lab, Department of Physics, University of Antwerp (2018-2019).

- K. Krishna Nand, “Geometric Feature Detection for Diffusion Tensor Magnetic Resonance Images (DT-MRI)”, Department of Electrical & Computer Engineering, University of British Columbia (2010-2012).

Undergraduate Students:

- Leif Stroman, School of Computing Science, Simon Fraser University (2012-2013).
- Ryan Neighbour, Department of Computing Science, University of Alberta (2006).

**REVIEWER
EXPERIENCE**

Reviewer for International Journals:

- Cerebral Cortex (2018-present).
- International Biomechanics (2018-present).
- IEEE Transactions on Image Processing (2016-present).
- Medical Physics (2017-present).
- Computers in Biology and Medicine (2017-present).
- Journal of Magnetic Resonance Imaging (2017-present).
- Brain Imaging and Behaviour (2016-present).
- Computational and Mathematical Methods in Medicine (2016-present).
- International Journal of Computer Assisted Radiology and Surgery (2016-present).
- Applied Sciences (2016-present).

Reviewer for International Conferences:

- IEEE International Symposium on Biomedical Imaging (ISBI), (2015-present).
- Advanced Machine Vision for Real-life and Industrially Relevant Applications (2018-present).

Reviewer for Grant Applications:

- The Wellcome trust/DBT India Alliance Fellowship (2018).

REFERENCES

Prof. Dr. Jan Sijbers (current supervisor)
Head of the imec-Vision Lab
Department of Physics, University of Antwerp
Address: Universiteitsplein 1 (N.1.13)
B-2610 Antwerpen, Belgium
Email: jan.sijbers@uantwerpen.be
Phone: +32 (0) 3 265 89 11

Prof. Dr. Ghassan Hamarneh (PhD supervisor)
Head of the Medical Image Analysis Lab (MIAL)
School of Computing Science, Simon Fraser University
Address: 8888 University Drive,
Burnaby, BC, V5A 1S6, Canada
Email: hamarneh@sfu.ca
Phone: +1 778 782 2214

Dr. Noël Keijsers (collaborating researcher, clinical)
Senior Researcher, Department of Research
Sint Maartenskliniek - Nijmegen
Address: P.O. Box 9011
6500 GM Nijmegen, The Netherlands
Email: n.keijsers@maartenskliniek.nl
Phone: +31 (0) 243 65 92 43

Dr. Flen Burg (collaborating researcher, industry)
Head of Research and Development
RS Scan International
Address: De Weven 7
3583 Paal, Belgium
Email: fien.burg@rsscan.com
Phone: +32 (0) 475 58 54 24

Publication Record

Journal Articles:

1. Brian G. Booth, Noël L.W. Keijsers, Jan Sijbers, Toon Huysmans. "An assessment of the information lost when applying data reduction techniques to dynamic plantar pressure measurements", *Journal of Biomechanics*, Vol 87, 2019, pp. 161-166. <https://doi.org/10.1016/j.jbiomech.2019.02.008>
2. Colin J. Brown, Steven P. Miller, Brian G. Booth, Jill G. Zwicker, Ruth E. Grunau, Anne R. Synnes, Vann Chau, and Ghassan Hamarneh. "Predictive connectome subnetwork extraction with anatomical and connectivity priors", *Computerized Medical Imaging and Graphics*, Vol 71, 2019, pp. 67-78. <https://doi.org/10.1016/j.compmedimag.2018.08.009>
3. Brian G. Booth, Noël L.W. Keijsers, Jan Sijbers, Toon Huysmans. "STAPP: SpatioTemporal Analysis of Plantar Pressure Measurements using Statistical Parametric Mapping", *Gait & Posture*, Vol 63, 2018, pp. 268-275. <https://doi.org/10.1016/j.gaitpost.2018.04.029>
4. Kristina Stanković, Brian G. Booth, Femke Danckaers, Fien Burg, Philippe Vermaelen, Saartje Duerinck, Jan Sijbers, Toon Huysmans. "Three-dimensional quantitative analysis of healthy foot shape: a proof of concept study", *Journal of Foot and Ankle Research*, Vol 11, 2018. <https://doi.org/10.1186/s13047-018-0251-8>
5. Jeremy Kawahara, Colin J. Brown, Steven P. Miller, Brian G. Booth, Vann Chau, Ruth E. Grunau, Jill G. Zwicker, and Ghassan Hamarneh. "BrainNetCNN: Convolutional Neural Networks for Brain Networks; Towards Predicting Neurodevelopment", *NeuroImage*, Vol. 146, 2017, pp. 1038-1049. <https://doi.org/10.1016/j.neuroimage.2016.09.046>
6. Brian G. Booth, Steven P. Miller, Colin J. Brown, Kenneth J. Poskitt, Vann Chau, Ruth E. Grunau, Anne R. Synnes, and Ghassan Hamarneh. "STEAM - Statistical Template Estimation for Abnormality Mapping: a Personalized DTI Analysis Technique with Applications to the Screening of Preterm Infants", *NeuroImage*, Vol. 125, 2016, pp. 705-723. <https://doi.org/10.1016/j.neuroimage.2015.08.079>
7. Colin J. Brown, Steven P. Miller, Brian G. Booth, Shawn Andrews, Vann Chau, Kenneth J. Poskitt, and Ghassan Hamarneh. "Structural network analysis of brain development in young preterm neonates," *NeuroImage*, Vol. 101, 2014, pp. 667-680. <https://doi.org/10.1016/j.neuroimage.2014.07.030>

Peer-Reviewed Conference Papers:

1. Brian G. Booth, Jan Sijbers, and Toon Huysmans. "A Machine Learning Approach to the Design of Customized Shoe Lasts", in *Proceedings of the 14th Annual Footwear Biomechanics Symposium, Footwear Science*, Vol. 11:sup1, pp. S17-S19, August 2019. <https://doi.org/10.1080/19424280.2019.1606055>
2. Jeroen Van Houtte, Kristina Stankovic, Brian G. Booth, Femke Danckaers, Véronique Bertrand, Frederik Verstreken, Jan Sijbers and Toon Huysmans. "An Articulating Statistical Shape Model of the Human Hand", in *Proceedings of the 9th International Conference on Applied Human Factors and Ergonomics (AFHE)*, July 2018, pp. 433-445. https://doi.org/10.1007/978-3-319-94223-0_41
3. Colin J. Brown, Kathleen P. Moriarty, Steven P. Miller, Brian G. Booth, Jill G. Zwicker, Ruth E. Grunau, Anne R. Synnes, Vann Chau, Ghassan Hamarneh. "Prediction of Brain Network Age and Factors of Delayed Maturation in Very Preterm Infants", in *Proceedings of Medical Image Computing and Computer-Assisted Intervention (MICCAI)*, October 2017, pp. 84-91. https://doi.org/10.1007/978-3-319-66182-7_10
4. Kristina Stanković, Femke Danckaers, Brian G. Booth, Fien Burg, Saartje Duerinck, Jan Sijbers, Toon Huysmans. "Foot Abnormality Mapping using Statistical Shape Modelling," *In Proceedings of 3D Body Scanning Technologies (3DBST)*, November 2016, pp. 70-79. <https://doi.org/10.15221/16.070>

5. Colin J. Brown, Steven Miller, Brian G. Booth, Jill Zwicker, Ruth Grunau, Anne Synnes, Vann Chau, and Ghassan Hamarneh. "Predictive Subnetwork Extraction with Structural Priors for Infant Connectomes," In *Proceedings of Medical Image Computing and Computer-Assisted Intervention (MICCAI)*, October 2016, pp. 175-183 (**Shortlisted for Best Student Paper Award**). https://doi.org/10.1007/978-3-319-46720-7_21
6. Colin J. Brown, Steven P. Miller, Brian G. Booth, Kenneth J. Poskitt, Vann Chau, Anne R. Synnes, Jill G. Zwicker, Ruth E. Grunau, and Ghassan Hamarneh. "Prediction of Motor Function in Very Preterm Infants using Connectome Features and Local Synthetic Instances," in *Proceedings of Medical Image Computing and Computer-Assisted Intervention (MICCAI)*, October 2015, pp. 69-76 (**33% Acceptance Rate**). https://doi.org/10.1007/978-3-319-24553-9_9
7. Brian G. Booth and Ghassan Hamarneh. "DTI-DeformIt: Generating Ground-Truth Validation Data for Diffusion Tensor Images," in *Proceedings of 11th IEEE International Symposium on Biomedical Imaging (ISBI)*, May 2014, pp. 730-733. <https://doi.org/10.1109/ISBI.2014.6867974>
8. Brian G. Booth and Ghassan Hamarneh. "A Cross-sectional Piecewise Constant Model for Segmenting Highly Curved Fiber Tracts in Diffusion MR Images," in *Proceedings of Medical Image Computing and Computer-Assisted Intervention (MICCAI)*, September 2013, pp. 469-476 (**32% Acceptance Rate**). https://doi.org/10.1007/978-3-642-40760-4_59
9. Colin J. Brown, Brian G. Booth, and Ghassan Hamarneh. "Uncertainty in Tractography via Tract Confidence Regions," in *Proceedings of MICCAI Workshop on Computational Diffusion MRI (CDMRI)*, September 2013, pp. 13-22 (**Podium Presentation**). https://doi.org/10.1007/978-3-319-02475-2_12
10. Colin J. Brown, Brian G. Booth, and Ghassan Hamarneh. "K-Confidence: Assessing Uncertainty in Tractography using k Optimal Paths," in *Proceedings of 10th IEEE International Symposium on Biomedical Imaging (ISBI)*, April 2013, pp. 250-253. <https://doi.org/10.1109/ISBI.2013.6556459>
11. Brian G. Booth and Ghassan Hamarneh. "Multi-region Competitive Tractography via Graph-based Random Walks," in *Proceedings of 11th IEEE Workshop on Mathematical Methods in Biomedical Image Analysis (MMBIA)*, January 2012, pp. 73-78 (**Podium Presentation**). <https://doi.org/10.1109/MMBIA.2012.6164747>
12. K. Krishna Nand, Rafeef Abugharbieh, Brian G. Booth, and Ghassan Hamarneh. "Detecting Structure in Diffusion Tensor MR Images," in *Proceedings of Medical Image Computing and Computer-Assisted Intervention (MICCAI)*, September 2011, pp. 90-97 (**29% Acceptance Rate**). https://doi.org/10.1007/978-3-642-23629-7_12
13. Brian G. Booth and Ghassan Hamarneh. "Consistent Information Content Estimation for Diffusion Tensor MR Images," in *Proceedings of 1st IEEE Conference on Healthcare Informatics, Imaging and Systems Biology (HISB)*, July 2011, pp. 166-173 (**Best Paper Award**). <https://doi.org/10.1109/HISB.2011.19>
14. Brian G. Booth and Ghassan Hamarneh. "Exact Integration of Diffusion Orientation Distribution Functions for Graph-based Diffusion MRI Analysis," in *Proceedings of 8th IEEE International Symposium on Biomedical Imaging (ISBI)*, March 2011, pp. 935-938 (**Podium Presentation**). <https://doi.org/10.1109/ISBI.2011.5872557>
15. Brian Booth and Xiaobo Li. "Boundary Point Detection for Ultrasound Image Segmentation using Gumbel Distributions," in *Proceedings of International Conference on Signal Processing and Multimedia Applications (SIGMAP)*, July 2007, pp. 179-183.
16. Brian Booth, Ryan Neighbour, and Xiaobo Li. "On agricultural ultrasound image segmentation," in *Proceedings of IEEE International Conference on Signal Processing (ICSP)*, November 2006, pp. 915-920 (**Podium Presentation**).
17. Brian Booth and Xiaobo Li. "Towards medical ultrasound image segmentation with limited prior knowledge," in *Proceedings of IEEE 12th Digital Signal Processing Workshop*, September 2006, pp. 488-493. <https://doi.org/10.1109/DSPWS.2006.265472>

Book Chapters:

1. Urs Ribary, Alex L. Mackay, Alexander Rauscher, Christine M. Tipper, Debbie Giaschi, Todd S. Woodward, Vesna Sossi, Sam M. Doesburg, Lawrence M. Ward, Anthony Herdman, Ghassan Hamarneh, [Brian G. Booth](#), and Alexander Moiseev. "Emerging neuroimaging technologies: Towards future personalized diagnostics, prognosis, targeted intervention and ethical challenges," In: *Neuroethics: Anticipating the Future*, J. Illes, S. Hossain, eds., Oxford University Press, pp. 15-53, 2017 (ISBN: 9780198786832). <https://doi.org/10.1093/oso/9780198786832.001.0001>
2. [Brian G. Booth](#) and Ghassan Hamarneh. "Diffusion MRI for Brain Connectivity Mapping and Analysis (Chapter 7)", In: *MRI: Physics, Image Reconstruction, and Analysis*, Angshul Majumdar, Rabab Kreidieh Ward, eds., CRC Press, pp. 137-171, 2015 (ISBN: 9781482298871). <https://doi.org/10.1201/b19353>
3. [Brian G. Booth](#) and Ghassan Hamarneh. "Brain Connectivity Mapping and Analysis using Diffusion MRI (Chapter 19)", In: *Medical Imaging: Technology and Applications*, Troy Farncombe, Krzysztof Iniewski, eds., CRC Press, pp. 529-563, 2013 (ISBN: 9781466582620). <https://doi.org/10.1201/b15511>

Published Datasets:

1. [Brian G. Booth](#), Noël L.W. Keijsers, Toon Huysmans, and Jan Sijbers. "The CAD WALK Hallux Valgus Dataset (Pre-Surgery)", (Version 2.0) [Data set], Zenodo, 2019. <http://doi.org/10.5281/zenodo.2598496>
2. [Brian G. Booth](#), Noel L.W. Keijsers, Toon Huysmans, and Jan Sijbers. "The CAD WALK Healthy Controls Dataset" (Version 1.0) [Data set], Zenodo, 2018. <http://doi.org/10.5281/zenodo.1265420>

Posters & Abstracts:

1. [Brian G. Booth](#), Noël L.W. Keijsers, Toon Huysmans, and Jan Sijbers. "Assessing Group Differences between Hallux Valgus Patients and Healthy Controls using Statistical Parametric Mapping," In *Proceedings of the Congress of the International Society of Biomechanics (ISB)*, Calgary, Canada, 2019 (**Podium Presentation**).
2. [Brian G. Booth](#), Noël LW Keijsers, Toon Huysmans, Jan Sijbers. "Advancing Analysis Techniques for Plantar Pressure Videos via the CAD WALK Open-Access Database," In *Proceedings of the IEEE 16th International Symposium on Biomedical Imaging (ISBI)*, Venice, Italy, 2019.
3. Bebart Janbek, [Brian G. Booth](#), and Ghassan Hamarneh. "A Tensor Field Mumford-Shah Segmentation of Neural Pathways in DW-MRI," In *Society for Industrial and Applied Mathematics (SIAM) Annual Meeting*, Pittsburgh, USA, 2017.
4. Jeremy Kawahara, Colin J. Brown, Steven Miller, [Brian G. Booth](#), Vann Chau, Ruth Grunau, Jill Zwicker, and Ghassan Hamarneh. "BrainNetCNN: Artificial Convolutional Neural Networks for Connectomes," In *2nd Annual Health Technology Symposium*, Vancouver, Canada, 2017.
5. Colin J. Brown, Steven Miller, [Brian G. Booth](#), Jill Zwicker, Ruth Grunau, Anne Synnes, Vann Chau, and Ghassan Hamarneh. "Predictive Subnetwork Extraction with Structural Priors for Infant Connectomes", In *Annual Neuroscience Extravaganza, Centre for Brain Health, UBC, Canada*, 2016.
6. Jeremy Kawahara, Colin J. Brown, Steven Miller, [Brian G. Booth](#), Vann Chau, Ruth Grunau, Jill Zwicker, and Ghassan Hamarneh. "BrainNetCNN: Artificial Convolutional Neural Networks for Connectomes," In *Annual Neuroscience Extravaganza, Centre for Brain Health, UBC, Canada*, 2016.

7. Colin J. Brown, Steven Miller, Brian G. Booth, Shawn Andrews, Vann Chau, Ken Poskitt, and Ghassan Hamarneh. "Analysis of Structural Connectome Development in Healthy Preterm Neonates". In *Annual Neuroscience Extravaganza, Brain Research Centre, UBC*, 2014.
8. Brian G. Booth, Steven Miller, Vann Chau, Ken Poskitt, and Ghassan Hamarneh. "Modelling the Healthy Premature Infant Brain," In *Annual Neuroscience Extravaganza, Brain Research Centre, UBC*, 2013 (**Best Poster Award**).
9. Shawn Andrews, Brian G. Booth, Steven Miller, Vann Chau, Ken Poskitt, and Ghassan Hamarneh. "Towards highly-automated detection of white matter injury in prematurely born babies from diffusion tensor MRI". In *Proceedings of the NeuroDevNet Brain Development Conference*, page 99, 2012.
10. Brian G. Booth and Ghassan Hamarneh. "Competitive Tractography for Extracting Brain Connectivity from Diffusion MRI," In *The 6th Annual Canadian Neuroscience Meeting (CAN-ACN)*, 2012.
11. Brian G. Booth, Steven Miller, Vann Chau, Ken Poskitt, and Ghassan Hamarneh. "Modelling the Healthy Premature Infant Brain," In *Child and Family Research Imaging Facility Grand Opening Event, BC Children's Hospital*, 2012.

Published Software:

1. dMRI Graph Embedding Toolbox (matlab)
https://www.cs.sfu.ca/~hamarneh/software/dMRIGraphEmbed/index_clean.html
2. DijkstraTract: Minimal Path Tractography (matlab, C)
https://www.cs.sfu.ca/~hamarneh/software/minPathTract/index_clean.html
3. DT-ICE: Diffusion Tensor Information Content Estimators (matlab)
https://www.cs.sfu.ca/~hamarneh/software/DT-ICE/index_clean.html
4. WalkTract: Random Walker Tractography (matlab)
https://www.cs.sfu.ca/~hamarneh/software/RWTract/index_clean.html
5. DT-STRUCT: DTI Structure Detectors (matlab, created with K. Krishna Nand)
https://www.cs.sfu.ca/~hamarneh/software/DT-STRUCT/index_clean.html
6. DT-Frenet: Frenet-Frame DTI Segmentation (matlab)
https://www.cs.sfu.ca/~hamarneh/software/DT-Frenet/index_clean.html
7. STEAM: Statistical Template Estimation for Abnormality Mapping (matlab, bash)
<https://www2.cs.sfu.ca/~hamarneh/software/steam/>
8. DeformIt 2.0 (matlab) https://www.cs.sfu.ca/~hamarneh/software/DeformIt/index_clean.html
9. Bilateral Filtering of Diffusion Tensor MRI (matlab, created with Judith Hradsky)
https://www.cs.sfu.ca/~hamarneh/software/dtibilat/index_clean.html