

DR. STEPHEN BROOKS

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Academic Scholarly Profile & Curriculum Vitae Compilation -- Institutional Record

1. ACADEMIC CREDENTIALS & EDUCATION

Ph.D. in Computer Science -- University of Cambridge, United Kingdom (2004)

Specialization: Computer Graphics, Image Synthesis and Editing

Thesis: Semi-automatic and example-based image synthesis and editing

M.Sc. in Computer Science -- University of British Columbia, Canada (2000)

Specialization: Interactive Graphics, Physical Sound Synthesis, and Motion Editing

B.Sc. in Computer Science (Honours) -- Brock University, Canada (1998)

2. ACADEMIC APPOINTMENTS

Full Professor -- Faculty of Computer Science, Dalhousie University, Halifax, Canada

Associate Professor -- Faculty of Computer Science, Dalhousie University

Assistant Professor -- Faculty of Computer Science, Dalhousie University

3. PRIMARY RESEARCH DOMAINS

- Computer Graphics & Non-Photorealistic Rendering (NPR)
- Scientific & Oceanic Multivariate Data Visualization
- 3D Geospatial Information Systems (GIS) & Cartographic Synthesis
- Perceptual Tone Mapping & Chromatic Dispersion Optics
- Geometric Computation, Polygonal Mesh Optimization & Service Encoding

4. SPONSORED RESEARCH & MAJOR GRANTS (CONFIRMED)

Transforming Climate Action (TCA) | Canada First Research Excellence Fund (CFREF)

Co-Investigator / Visualization Lead in ~\$400M multi-institutional ocean climate research consortium.

NSERC Discovery Grant | Natural Sciences and Engineering Research Council of Canada

Continuous individual research discovery program funding visual analytics, geometry, and graphics.

Canada Foundation for Innovation (CFI) | Leaders Opportunity Fund / IOF

Advanced laboratory infrastructure for spatial computing, visualization, and 3D simulation.

Nova Scotia Research and Innovation Trust (NSRIT)

Provincial matching infrastructure supporting high-performance computer graphics systems.

5. UNIVERSITY PEDAGOGY & TEACHING PORTFOLIO

CSCI 3161: Designing Modern Computer Graphics (Core Undergraduate Graphics)

CSCI 4168: Game Design and Development (3D Game Physics & Interactive Simulations)

CSCI 4166 / CSCI 6406: Computer Vision (Undergraduate & Graduate Machine Vision)

CSCI 3171: Network Computing (Network Architecture & Distributed Systems)

DR. STEPHEN BROOKS -- ACADEMIC PROFILE & SCHOLARLY RECORD (CONT.)

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6. GRADUATE SUPERVISION & RESEARCH MENTORSHIP

Active Research Group: 6 graduate researchers (Ph.D. and M.Sc. candidates) in graphics & GIS.

Supervision Alumni: 54 completed dissertations across Ph.D., M.Sc., and B.Sc. Honours degrees.

Alumni Placements: Leading positions across Canadian universities, game studios, and technology labs.

7. SELECTED PEER-REVIEWED PUBLICATIONS

Adaptive Meshes with Encoded Services

H. Lee, S. Brooks. Proceedings of GRAPP 2026. DOI: 10.5220/0014295300004728

Encoding Research Problem Statements as Relational Structures: A Case Study in Ocean Science

Z. Zhong, S. Brooks. IEEE CAOS 2026. DOI: 10.1109/caos69069.2026.11666277

Encoding Functionality Directly into Polygonal Models

H. Lee, S. Brooks. Proceedings of GRAPP 2026. DOI: 10.5220/0014294900004728

Ocean Science Visualization Via the World Ocean Assessment

N. Orian, S. Brooks, et al. International Conference on Information Visualization (IV 2025).

Visualizing Uncertainty with Simulated Chromatic Aberration [Open Access Direct PDF]

M. Islam, S. Brooks. Journal of Perceptual Imaging, Vol 7, 2024. DOI: 10.2352/j.percept.imaging.2024.7.000403

Visual Analysis of Oceanic Multivariate Species Time-Series Data

K. Kumar, S. Brooks. Ecological Informatics, Vol 80, 2024. DOI: 10.1016/j.ecoinf.2024.102500

Objective Quality Assessment Based Tone Mapping Optimization

K. Gao, S. Brooks. Computers & Graphics, Vol 74, 2018. DOI: 10.1016/j.cag.2018.05.001

FloVis: NetFlow Visual Analysis for Computer Security

T. Taylor, S. Brooks, J. McHugh. IEEE VAST 2011. DOI: 10.1109/VAST.2011.6102446

Multilayer Hybrid Visualizations to Support 3D GIS [Institutional Repository Preprint]

J. L. Whalley, S. Brooks. Computers, Environment and Urban Systems, 2008. DOI: 10.1016/j.compenvurbsys.2008.02.002

8. NOTE ON DOCUMENT SOURCING

This academic profile is a verified compilation of publicly recorded institutional appointments, peer-reviewed publications, and university course directories at Dalhousie University.

For inquiries, complete grant ledgers, or official university transcripts, contact sbrooks@cs.dal.ca.