Silvia Sellán

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www.silviasellan.com

COLUMBIA UNIVERSITY
IN THE CITY OF NEW YORK

Academic Appointments

Columbia University *2025 - Present*
Department of Computer Science
Assistant Professor

Massachusetts Institute of Technology *2024 - 2025*
Department of Electrical Engineering and Computer Science
Postdoctoral Associate

Education

University of Toronto *2019 - 2024*
PhD in Computer Science | *Supervised by Prof. Alec Jacobson*

University of Oviedo *2014 - 2019*
BSc in Mathematics and BSc in Physics

Awards

Dimitris N. Chorafas Prize *2025*
Dimitris N. Chorafas Foundation | *10,000 USD*

SGP Software Award: Gpytoolbox *2025*
Eurographics Symposium on Geometry Processing (with: Prof. Oded Stein) | *1,000 EUR*

Alain Fournier Outstanding Doctoral Dissertation Award *2025*
Canadian Human-Computer Communications Society | *3,000 CAD*

Eurographics PhD Thesis Award *2025*
Eurographics | *London, United Kingdom*

MIT Postdoctoral Fellowship for Engineering Excellence *2024-2025*
MIT School of Engineering | *75,000 USD*

DiDi Graduate Student Award in Computer Science *2024*
University of Toronto Department of Computer Science | *10,000 CAD*

Vanier Canada Doctoral Scholarship *2021-2024*
Natural Sciences and Engineering Research Council of Canada (NSERC) | *150,000 CAD*
Awarded to 166 graduate students across all of Canada and all academic disciplines.

Connaught International Scholarship for Doctoral Students *2019 - 2024*
University of Toronto School of Graduate Studies | *50,000 CAD*

EECS Rising Stars *2023*
Academic Career Workshop in EECS | *Travel Funding*

HLF Ernst Abbe Grant *2023*
Heidelberg Laureate Forum | *Travel Funding*

Beatrice "Trixie" Worsley Graduate Scholarship in Computer Science *2021, 2023*
University of Toronto Department of Computer Science | *8,000 CAD*
Awarded to a student who has taken an active role in promoting women in Computer Science.

Adobe PhD Fellowship *2022*
Adobe Inc. | *10,000 USD*

Dean's Doctoral Excellence Scholarship *2021*
University of Toronto Faculty of Arts & Science | *25,000 CAD*
Awarded to a single doctoral student across all the University of Toronto Faculty of Arts & Science disciplines.

Adobe Research Fellowship *2020 - 2021*
Adobe Inc. | *Honorable mention*

50th Anniversary Graduate Scholarship *2020*
University of Toronto Department of Computer Science | *2,000 CAD*

Graduate Program Award *2019 - 2020*
University of Toronto Department of Computer Science | *10,000 CAD*

Recognition of Excellence Award *2019 - 2020*
University of Toronto Department of Computer Science | *10,000 CAD*

Adobe Women in Technology Scholarship *2019*
Adobe Inc. | *Honorable Mention*

SenseTime Fellowship *2019*
MIT | *Granted but declined*

Scholarship for Academic Excellence *2014 - 2019*
María Cristina Masaveu Peterson Foundation | *50,000 EUR*

Research Funding

Research Support *2025*
BRAID | *Donation*

Supported Research Project *2025-2026*
Columbia-Dream Sports AI Innovation Center | *99,471 USD*
Co-PI: Prof. Steven Feiner

Interdisciplinary Research Seed Funding (SIRS) *2025-2026*
Columbia Fu Foundation School of Engineering | *85,000 USD*
Co-PI: Prof. Hod Lipson

Research Support *2024*
nTop | *Donation*

Research Support *2025*
Adobe | *Donation*

Students and Postdocs

Ningna Wang *2025 - Present*
Postdoctoral Research Scientist at Columbia University

Xiana Carrera Alonso *2025 - Present*
PhD Student at Columbia University

Hyunwoo (Brian) Kim *2025 - Present*
PhD Student at Columbia University

Daria Nogina *2025 - Present*
PhD Student at Columbia University

Publications

Stochastic Poisson Surface Reconstruction with One Solve using Geometric Gaussian Processes
Sidhanth Holalkere, David Bindel, **Silvia Sellán**, Alexander Terenin
ICML 2025

Variational Elastodynamic Simulation
Leticia Mattos Da Silva, **Silvia Sellán**, Natalia Pacheco-Tallaj, Justin Solomon
SIGGRAPH 2025

Mesh Simplification for Unfolding
Manas Bhargava, Camille Schreck, Marco Freire, Pierre-Alexandre Hugron, Sylvain Lefebvre, **Silvia Sellán***, Bernd Bickel* (*joint last authors)
Computer Graphics Forum (to be presented at Eurographics 2025)

Mirror Bridges Between Probability Measures
Leticia Mattos Da Silva, **Silvia Sellán**, Francisco Vargas, Justin Solomon
Under Peer Review

Surface-Filling Curve Flows via Implicit Medial Axes
Yuta Noma, **Silvia Sellán**, Nicholas Sharp, Karan Singh, Alec Jacobson
SIGGRAPH 2024

Reach for the Arcs: Reconstructing Surfaces from SDFs via Tangent Points
Silvia Sellán, Yingying Ren, Christopher Batty, Oded Stein
SIGGRAPH 2024

Bayes' Rays: Uncertainty Quantification for Neural Radiance Fields
Lily Goli, Cody Reading, **Silvia Sellán**, Alec Jacobson, Andrea Tagliasacchi
CVPR 2024 (Highlight)

Reach for the Spheres: Tangency-Aware Surface Reconstruction of SDFs
Silvia Sellán, Christopher Batty, Oded Stein
SIGGRAPH Asia 2023

Neural Stochastic Screened Poisson Reconstruction
Silvia Sellán, Alec Jacobson
SIGGRAPH Asia 2023

Constructive Solid Geometry on Neural Signed Distance Fields
Zoë Marschner, **Silvia Sellán**, Hsueh-Ti Derek Liu, Alec Jacobson
SIGGRAPH Asia 2023

Stochastic Poisson Surface Reconstruction
Silvia Sellán, Alec Jacobson
SIGGRAPH Asia 2022

Breaking Bad: A Dataset for Geometric Fracture and Reassembly
Silvia Sellán*, Yun-Chun Chen*, Ziyi Wu*, Animesh Garg, Alec Jacobson (*joint first authors)
NeurIPS 2022 (Spotlight)

Breaking Good: Fracture Modes for Realtime Destruction
Silvia Sellán, Jack Luong, Leticia Mattos Da Silva, Aravind Ramakrishnan, Yuchuan Yang, Alec Jacobson
SIGGRAPH Asia 2022

Sex and Gender in the Computer Graphics Research Literature
Ana Dodik*, **Silvia Sellán***, Amanda Phillips, Theodore Kim
SIGGRAPH Talk 2022

Swept Volumes via Spacetime Numerical Continuation
Silvia Sellán, Noam Aigerman, Alec Jacobson
SIGGRAPH 2021

Opening and Closing Surfaces
Silvia Sellán, Jacob Kesten, Yan Sheng Ang, Alec Jacobson
SIGGRAPH Asia 2020

Developability of Heightfields via Rank Minimization
Silvia Sellán, Noam Aigerman, Alec Jacobson
SIGGRAPH 2020

Solid Geometry Processing on Deconstructed Domains
Silvia Sellán, Herng Yi Cheng, Yuming Ma, Mitchell Dembowski, Alec Jacobson
ACM / Eurographics Symposium on Geometry Processing 2019

Patents

Swept Volume Determination Techniques
Silvia Sellán, Noam Aigerman, Alec Jacobson
United States Patent No. 11810255, 2023

Generating Developable Depth Images Using Rank Minimization
Silvia Sellán, Noam Aigerman, Alec Jacobson
United States Patent No. 11080819, 2021

Software

Gpytoolbox: A Python geometry processing toolbox
Silvia Sellán, Oded Stein
A library of general geometry processing Python research utility functions, including basic procedural meshes, differential geometric operators, bounding volume hierarchies and surface reconstruction from point clouds and SDFs.

Other Publications

Task-Aware 3D Geometric Synthesis
Silvia Sellán
PhD Thesis supervised by Prof. Alec Jacobson

Geometry Synthesis for Critical Applications
Silvia Sellán
SIGGRAPH Asia Doctoral Consortium, 2023

Efficient and Robust Swept Volumes
Silvia Sellán, Noam Aigerman, Alec Jacobson
Vector Institute Research Symposium poster, 2021

Applications of Geometry Processing to Computer Graphics
Silvia Sellán
B.Sc. in Mathematics thesis co-supervised by Profs. Alec Jacobson and Carlos Fernández García

An Introduction to Primal Inflation
Silvia Sellán
BSc in Physics thesis supervised by Prof. Luigi Toffolatti

Solid Geometry Processing on Deconstructed Domains
Silvia Sellán, Herng Yi Cheng, Yuming Ma, Mitchell Dembowski, Alec Jacobson
ACM / Eurographics SGP Poster, 2018

Other Research Experience

Yale University *Winter 2022*
Research Consultant | *Supervised by Prof. Theodore Kim*

Adobe Research *Summer 2020*
Research Intern | *Mentored by Dr. Noam Aigerman and Supervised by Dr. Jovan Popovic*

Adobe Research *Summer 2019*
Research Intern | *Mentored by Dr. Noam Aigerman and Supervised by Dr. Jovan Popovic*

Fields Institute for Research in the Mathematical Sciences *Summer 2018*
Undergraduate Research Intern | *Supervised by Prof. Alec Jacobson*

Fields Institute for Research in the Mathematical Sciences *Summer 2017*
Undergraduate Research Intern | *Supervised by Prof. Alec Jacobson*

ICMAT (Institute of Mathematical Sciences) *Summer 2017*
Grant Programme Severo Ochoa - Introduction to Research | *Supervised by Prof. Javier Parcet*

Academic Service

Natural Sciences and Engineering Research Council of Canada (NSERC) *2026*
External grant reviewer

Geometric Modeling and Processing (GMP) *2028*
Senior Program Chair

Geometric Modeling and Processing (GMP) *2027*
Junior Program Co-Chair

Austrian Science Fund *2025*
External grant reviewer

Women in Graphics Rising Stars Program *2025*
Selection Committee

ACM SIGGRAPH *2025*
Technical Papers Committee Member

International Conference on Geometric Modeling and Processing *2025, 2026*
International Program Committee Member

Graphics Replicability Stamp Initiative *2024 - Present*
International Evaluation Committee Member

ACM SIGGRAPH Nominations Committee *2025, 2026*
Invited Member

ACM / Eurographics Symposium on Geometry Processing (SGP) *2025*
Technical Program Chair

Eurographics *2025, 2026*
International Program Committee Member

ACM / Eurographics Symposium on Geometry Processing (SGP) *2024*
International Program Committee Member

Summer Geometry Initiative *2023 - Present*
Steering Committee Member

ACM / Eurographics Symposium on Geometry Processing (SGP) *2024*
Graduate School Chair

ACM SIGGRAPH Women in Graphics Research Community Group *2022 - 2023*
Executive Committee Member

SIGGRAPH Research Career Development Committee *2021 - 2023*
Committee Member (in Undergraduate Mentorship Subcommittee)

ACM / Eurographics Symposium on Geometry Processing (SGP) *2023*
Session Chair: Representation and Learning

ACM / Eurographics Symposium on Geometry Processing (SGP) *2023*
International Program Committee Member

CVPR Deep Learning for Geometric Computing *2023*
Organizing Committee Member

Women in Computer Graphics Research (WiGRAPH) *2020 - 2022*
Executive Committee Member

CVPR Deep Learning for Geometric Computing *2022*
Organizing Committee Member

ICCV Deep Learning for Geometric Computing *2021*
Program Committee Member

Referee Service

CVPR *2026*

NeurIPS *2025*

Pacific Graphics *2024*

IEEE Transactions on Image Processing *2024*

Journal of Cultural Heritage *2024*

ACM SIGGRAPH Asia Technical Papers *2023 - Present*

ACM / Eurographics Symposium on Geometry Processing (SGP) *2023 - 2024*

ACM SIGGRAPH Technical Papers *2022 - Present*

Eurographics Technical Papers *2021 - 2024*

ACM Transactions on Graphics (ToG) *2021 - Present*

IEEE Transactions on Pattern Analysis and Machine Intelligence *2023*

The Visual Computer (TVCJ) *2023*

CVPR DLGC Technical Papers *2022-2024*

International Symposium on Robotics Research *2022*

Computer Aided Design Journal (CAD-J) *2022, 2024*

ACM SIGGRAPH Posters *2021 - 2024*

ICCV DLGC Technical Papers *2021*

Journal of Computer Graphics Techniques (JCGT) *2021*

Departmental Service

PhD Thesis Committee: Honglin Chen, Columbia University *2026*
Member

PhD Presidential Fellowship Committee *2026*
Member

CS Frontiers *2026*
Volunteer Speaker

Faculty of Arts and Science Graduate Diversity Working Group *2022*
Invited Member

Dean's Advisory Search Committee - Department Chair, Computer Science *2021 - 2022*
Invited Member

DGP Working Group on Fostering a Safe and Inclusive Workplace *2021 - 2022*
Member

DCS Grad program talk for Ukranian undergraduate visiting students *2022*
Panelist

Graduate Applications Triager *2021*
16 hours of paid work on processing graduate school applications

Talks

Geometric Processing with Signed Distance Functions
nTop | *Invited Talk* — New York City (United States) | *October 2024*
SIGMA Workshop | *Invited Talk* — CIRM Marseille (France) | *October 2024*

Stochastic Computer Graphics
University of Waterloo Computer Science Seminar | *hosted by Prof. Craig Kaplan* — Waterloo (Canada) | *January 2024*
University of Victoria Computer Science Seminar | *hosted by Prof. Teseo Schneider* — Victoria (Canada) | *February 2024*
Max Planck Institute for Informatics Seminar | *hosted by Prof. Christopher Theobalt* — Saarbrücken (Germany) | *February 2024*
Johns Hopkins University Computer Science Seminar | *hosted by Prof. Misha Kazhdan* — Baltimore (United States) | *February 2024*
Institute of Science and Technology Austria | *hosted by Prof. Chris Wojtan* — Vienna (Austria) | *February 2024*
Caltech Computer Science Seminar | *hosted by Prof. Aaron Ames* — Pasadena (United States) | *March 2024*
Brown University Computer Science Seminar | *hosted by Prof. Daniel Ritchie* — Providence (United States) | *March 2024*
Columbia University Computer Science Seminar | *hosted by Prof. Changxi Zheng* — New York City (United States) | *March 2024*
MIT Computer Science Seminar | *hosted by Prof. William Freeman* — Cambridge (United States) | *March 2024*
Princeton University Computer Science Seminar | *hosted by Prof. Adam Finkelstein* — Princeton (United States) | *March 2024*
CMU Computer Science Seminar | *hosted by Prof. Keenan Crane* — Pittsburgh (United States) | *March 2024*
UMass Amherst Machine Learning and Friends Lunch | *Invited Talk* — Virtual | *October 2024*

Uncertainty Quantification in 3D Geometric Synthesis
University of Zaragoza Graphics and Imaging seminar | *hosted by Prof. Ana Serrano* — Virtual | *November 2023*
Brown University Graphics seminar | *hosted by Prof. Daniel Ritchie* — Virtual | *October 2023*
Banff International Research Station 3D Generative Modeling Workshop | *Invited talk* — Banff (Canada) | *July 2023*

Geometry +: Uncertain Surface Reconstruction

École polytechnique Graphics seminar | *hosted by Prof. Maks Ovsjanikov*	Paris (France) | *July 2023*
INRIA seminar | *hosted by Profs. Bruno Lévy and Sylvain Lefebvre*	Nancy (France) | *June 2023*
CNRS seminar | *hosted by Dr. Julie Digne*	Lyon (France) | *June 2023*
University of Navarra Graphics and Vision seminar | *hosted by Prof. Asier Marzo*	Pamplona (Navarra) | *June 2023*
University of Edinburgh Geometry seminar | *hosted by Prof. Amir Vaxman*	Edinburgh (Scotland) | *June 2023*
Adobe Research seminar | *hosted by Dr. Valentin Deschaintre*	London (England) | *June 2023*
University College London Vision seminar | *hosted by Prof. Kaan Akşit*	London (England) | *June 2023*
University of British Columbia Graphics seminar | *hosted by Prof. Alla Sheffer*	Vancouver (Canada) | *June 2023*
Simon Fraser University Vision seminar | *hosted by Prof. Andrea Tagliasacchi*	Vancouver (Canada) | *June 2023*
EPFL Graphics seminar | *hosted by Prof. Mark Pauly*	Lausanne (Switzerland) | *May 2023*
ETH Graphics seminar | *hosted by Prof. Olga Sorkine-Hornung*	Zürich (Switzerland) | *May 2023*
University of Waterloo Graphics seminar | *hosted by Prof. Craig Kaplan*	Waterloo (Canada) | *April 2023*
University of Montreal Graphics seminar | *hosted by Prof. Mikhail Bessmeltsev*	Montréal (Québec) | *November 2022*
Johns Hopkins Graphics seminar | *hosted by Prof. Misha Kazhdan*	Baltimore (United States) | *November 2022*
Columbia University Graphics seminar | *hosted by Prof. Changxi Zheng*	New York City (United States) | *November 2022*
New York University Graphics seminar | *hosted by Prof. Daniele Panozzo*	New York City (United States) | *November 2022*
MIT Graphics seminar | *hosted by Prof. Justin Solomon*	Cambridge (United States) | *November 2022*
Dartmouth Graphics and Rendering seminar | *hosted by Prof. Wojciech Jarosz*	Hanover (United States) | *November 2022*
TomatoGRAPH | *Technical Talk*	Toronto (Canada) | *December 2021*

Mesh Math and Beyond: An introduction to shape representations

Summer Geometry Initiative | *Full-day tutorial*	Virtual | *July 2023*
Summer Geometry Initiative | *Full-day tutorial*	Virtual | *July 2022*
Summer Geometry Initiative | *Full-day tutorial*	Virtual | *July 2021*

Blender for Academic Papers

Graphics Interface | *Invited Course*	Victoria (Canada) | *June 2023*
Geometry and Architecture Summit | *Invited Talk*	Toronto (Canada) | *October 2022*
ACM / Eurographics SGP | *Invited Course*	Virtual | *June 2022*

Geometry +: Moving Fast, Breaking Things and Putting Them Back Together

University of Southern California Graphics seminar | *hosted by Prof. Oded Stein*	Los Angeles (United States) | *April 2023*
McGill University Graphics seminar | *hosted by Prof. Oded Stein*	Montréal (Québec) | *November 2022*
Ubisoft research seminar | *hosted by the LaForge team*	Montréal (Québec) | *November 2022*
Yale University Rising Stars seminar | *hosted by Prof. Theodore Kim*	New Haven (United States) | *November 2022*
Engineering and Applied Science Forum | *hosted by the EASF team*	Virtual | *November 2022*

Uncertain Surface Reconstruction

UCLA and CalTech's Grundfest Memorial Lecture | *hosted by Profs. Achuta Kadambi and Katie Bouman*	Virtual | *March 2023*

Research in Geometry Processing

University of Toronto Undergraduate Graphics Club | *Invited Talk*	Toronto (Canada) | *February 2023*

Stochastic Poisson Surface Reconstruction

ACM SIGGRAPH Asia | *Technical Paper presentation*	Daegu (South Korea) | *December 2022*

Breaking Good: Fracture Modes for Realtime Destruction

ACM SIGGRAPH Asia | *Technical Paper presentation*	Daegu (South Korea) | *December 2022*

Breaking Bad: A Dataset for Geometric Fracture Reassembly

NeurIPS | *Featured (oral) paper presentation*	New Orleans (United States) | *November 2022*

Virtual Bodies that Matter: A Trans Researcher"s Career in Computer Graphics

Georgetown's Gender and Media Seminar | *hosted by Prof. Amanda Phillips*	Washington, D.C. (United States) | *November 2022*

Sex and Gender in the Computer Graphics Literature

Queer in AI @ NeurIPS workshop | *Invited Talk*	New Orleans (United States) | *November 2022*
UNC Chapel Hill | *hosted by Prof. Roni Sengupta*	New Orleans (United States) | *November 2022*
ACM SIGGRAPH | *Talk presentation*	Vancouver (Canada) | *August 2022*

A Deep Dive into Implicit Swept Volumes

University of Toronto Undergraduate Graphics Club | *Invited Talk*	Toronto (Canada) | *March 2022*

INRIA MFX research seminar | *hosted by Prof. Sylvain Lefebvre* — Virtual | *June 2021*
MIT Graphics research seminar | *hosted by Prof. Justin Solomon* — Virtual | *June 2021*
GraphQUON | *Technical presentation* — Virtual | *December 2020*

Swept Volumes via Spacetime Numerical Continuation
ACM SIGGRAPH | *Technical Paper presentation* — Virtual (originally Los Angeles) | *August 2021*

An Introduction to GP Programming in MATLAB with Gptoolbox
ACM / Eurographics SGP | *Invited Course* — Virtual | *July 2021*

Developable Surfaces: A Case Study in Discrete Differential Geometry
Lancaster University Pure Mathematics Postgraduate Forum | *Invited Talk* — Virtual | *March 2021*
Technion research seminar | *hosted by Prof. Mirela Ben-Chen* — Virtual | *December 2020*
Carnegie Mellon University Geometry seminar | *hosted by Prof. Keenan Crane* — Virtual | *November 2020*

Seamless Integration of Virtual and Real World
Eurographics 2021 | *Doctoral Consortium talk* — Virtual (originally Vienna) | *May 2021*
University of Toronto | *PhD Qualifying Exam* — Toronto (Canada) | *September 2020*

Opening and Closing Surfaces
ACM SIGGRAPH Asia | *Technical Paper presentation* — Virtual (originally Daegu) | *December 2020*
Epic Games | *hosted by Dr. Ryan Schmidt* — Virtual | *November 2020*
Fields Institute Undergraduate Summer Research Program | *End-of-summer research talk* — Toronto (Canada) | *August 2017*
University of Toronto DCS Summer Research Program | *Mid-summer research talk* — Toronto (Canada) | *July 2017*

Developability of Heightfields via Rank Minimization
Toronto Geometry Colloquium | *Opener talk for Prof. Olga Sorkine-Hornung* — Virtual | *October 2020*
SIGGRAPH 2020 | *Technical Paper presentation* — Virtual (originally Washington, D.C.) | *August 2020*

Solid Geometry Processing on Deconstructed Domains
Stanford University Graphics seminar | *hosted by Prof. Doug James* — Stanford (United States) | *October 2019*
ACM / Eurographics SGP | *Technical Paper presentation* — Milan (Italy) | *July 2019*
Toronto-Montreal Area Graphics workshop | *Technical talk* — Toronto (Canada) | *December 2017*
Fields Institute Undergraduate Summer Research Program | *End-of-summer research talk* — Toronto (Canada) | *August 2017*
University of Toronto DCS Summer Research Program | *Mid-summer research talk* — Toronto (Canada) | *July 2017*

Applications of Geometry Processing to Computer Graphics
University of Oviedo | *B.Sc. in Mathematics Thesis Defense* — Oviedo (Spain) | *June 2019*

An Introduction to Primal Inflation
University of Oviedo | *B.Sc. in Physics Thesis Defense* — Oviedo (Spain) | *June 2019*

News

Animation technique simulates the motion of squishy objects *June 2025*
MIT News, written by Adam Zewe

What Do Food and Research Have in Common? More Than You Might Think *January 2024*
Spektrum.de, written by Nina Beier

Computer graphics researcher Silvia Sellán is awarded two prestigious scholarships *July 2021*
A&S News, written by Chris Sasaki

Silvia Sellán on Virtual Colloquium Planning *June 2021*
Q&A with WiGRAPH, written by Kate Salesin

Organizing

ACM SIGGRAPH Women in Graphics Research Community group *2023*
Undergraduate Outreach Coordinator

CVPR Deep Learning for Geometric Computing Workshop *2023*
Organizing Committee Member

ACM SIGGRAPH Women in Graphics Research Community group *2022*
Event Coordinator: Symposium on Geometry Processing

Toronto Geometry Colloquium *2020 - 2023*
Founder, organizer and art director

SIGGRAPH Graduate Applications Mentorship Program *2022*
Founder and organizer

Summer Geometry Institute *2022*
Admissions committee member and session planner

CVPR Deep Learning for Geometric Computing Workshop *2022*
Organizing Committee Member

Women in Graphics Research *2020 - 2021*
Event Coordinator: Symposium on Geometry Processing

SIGGRAPH Graduate Applications Mentorship Program *2021*
Founder and organizer

Summer Geometry Institute *2021*
Admissions committee member and session planner

Symposium on Geometry Processing (SGP) *2021*
Student volunteer working on tech support full time during the conference and in Spanish-language outreach

Toronto-Montreal-Waterloo Graphics Workshop (TomatoGRAPH) *2021*
Student volunteer

Teaching

Summer Geometry Initiative *Summer 2021, 2022, 2023, 2024*
Instructor of a full-day tutorial including lectures, coding demos and exercises

Graphics Interface *Summer 2023*
Lecturer of the course Blender for Academic Papers

Symposium on Geometry Processing (SGP) *Summer 2022*
Lecturer of the SGP course Blender for Academic Papers

Symposium on Geometry Processing (SGP) *Summer 2021*
Co-lecturer of the SGP course An introduction to geometry processing programming in MATLAB with gptoolbox

CSC165: Mathematical Expression and Reasoning for Computer Science *Winter 2020*
Teaching Assistant (120 hours) for Prof. David Liu

Individual High School Tutoring *2015-2018*
Weekly paid mathematics and physics tutoring

Teaching Feedback

Summer Geometry Institute *2021*
During the summer of 2021, I planned, prepared and conducted a 6-hour long tutorial session on the topic of shape representations for undergraduate students of underrepresented communities, as part of MIT's Summer Geometry Institute (SGI). A representative sample of the anonymous feedback collected by professor Justin Solomon about my teaching is reproduced below, each quotation corresponding to different student.

> *Silvia Sellán's presentation was idyllic, it gave the feeling of being a duck in a pond being fed delicious crumbs of bread, the students being the duck and Silvia the feeder throwing in one after another the information that we like the ducks devoured. The presentation itself was amazing to go beyond analogy it was clear and concise towards learning the topic, the information did not feel too overwhelming, nor too brief. The exercises as well as giving focus upon them and breaking them apart into which to do at what times, they felt like the perfect amount of material in order to have us learn and test our knowledge of the topics.*
>
> *I just wanted to say that I really enjoyed Silvia's programme. Cutting out all the formulas definitely made her material really accessible and easy to follow without worrying about the precise details of what is going on. I think leaving these details for us to figure out by doing the exercises is really good for developing understanding, rather than having a perhaps more technical talk which is harder to follow and then not quite knowing how to approach the exercises.*
>
> *Silvia's lecture was the easiest to follow and the most approachable.*

Silvia's tutorial: Lively and engaging, I liked how a narrative that tied in everything together neatly was presented.

I really liked Silvia Sellan's tutorial day because for the presentations she gave us a story illustrating the motivation behind the concepts and theory and the actual coding assignments were very accessible and did not require a lot of background material.

I think a very good example of this was Silvia Sellán's tutorial day. She approached the advanced topics from a big picture perspective and all of the coding exercises needed "basic" MATLAB and knowledge of calculus and a small amount of linear algebra.

I thoroughly enjoyed Silvia's talk and the associated exercises.

I also found Silvia's talk very valuable, not only for the geometry processing material offered (which was undoubtedly great, well-structured and very accessible), but also for increasing our awareness about potential nefarious uses of geometry processing. Also the brief digressions on true diversity when talking about fonts/letters were in my opinion very welcome – I (unfortunately) tend to think in a very "westernized" way, and it's always good to bring awareness to things outside of our intellectual comfort zone.

I really liked Silvia Sellán's day of the tutorial week. I think she did a really good job of creating presentations and exercises that met me where I am as a student without a formal experience in geometry processing. The mathematics and computer science that she talked as well as exercises she designed were accessible to me as someone who has undergraduate majors in mathematics and computer science as well as had participated in larger projects with programming computer graphics components. I also think she did a really good job of telling and motivating a story, which was really important to staying engaged throughout the day. I also really appreciate that she spoke about ethics in computing and the need to think critically about academic work. It's definitely something that is not spoken enough about and that needs to be spoken about more.

YOU GUYS ARE WONDERFUL! Not gonna lie, I started looking at PhD opportunities to pursue this field after attending this program.

Volunteering

General election worker *July 2023*
Day-long volunteer helping citizens vote on the day of the Spanish General Elections.

Reading Partners *August 2020*
Translation of documents into Spanish for literacy non-profit

General election worker *April 2019*
Day-long volunteer helping citizens vote on the day of the Spanish General Elections.

General election worker *June 2016*
Day-long volunteer helping citizens vote on the day of the Spanish General Elections.