Mickaël Sereno

Curriculum Vitae

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Education

2022 **PostDoc**, *Inria, University of Paris-Saclay*, Saclay.
PostDoc at Inria working on *The visualization of care pathways stored on the SNDS database* under the supervision of Jean-Daniel Fekete for one year.

2018–2021 **PhD**, *Inria, University of Paris-Saclay*, Saclay.
PhD student at Inria working on *Collaborative Data Exploration and Discussion Supported by Augmented Reality* under the supervision of Tobias Isenberg. Date of the defense: 14th of December, 2021.

2017–2018 **Master's degree in HCI**, *University of Paris-Saclay*, Orsay.

2013–2018 **Undergraduate and graduate studies in Computer Science Engineering**, *Polytech Paris-Sud*, Orsay.

2011–2013 **High school diploma - Scientific section**, *Lycée Jean-Macé*, Vitry-Sur-Seine.
Grade B

Community Service and Activities

2022 **Program Committee**, *Proc. ACM MobileHCI*.
Reviewed three papers as a primary associate committee member, and three papers as a secondary associate committee member.

Publications

2022 **M. Sereno**, S. Gosset, L. Besançon, T. Isenberg. **Hybrid Touch/Tangible Spatial Selection in Augmented Reality**. Computer Graphics Forum, 41(3), June 2022. To appear.

2022 **M. Sereno**. **Collaborative Data Exploration and Discussion with Augmented Reality Support**. PhD thesis report, Université Paris-Saclay, 2022. Defense: 14th of December 2021.

2021 **M. Sereno**, L. Besançon, T. Isenberg. **Point Specification in Collaborative Visualization for 3D Scalar Fields Using Augmented Reality**. Virtual Reality, to appear, Springer.

2021 **M. Sereno**, X. Wang, L. Besançon, M. J. McGuffin, T. Isenberg. **Collaborative Work in Augmented Reality: A Survey**. IEEE Transaction of Visualization and Computer Graphics, to appear, IEEE.

2020 **M. Sereno**, T. Isenberg. **Subjective Views in Co-Located Augmented Reality–Initial Design**. In Proc. VIS 2020, to appear, Poster.

2020 S. Gosset, **M. Sereno**, L. Besançon, T. Isenberg. **Tangible Volumetric Brushing in Augmented Reality**. In Proc. VIS 2020, to appear, Poster.

2020   X. Wang, L. Besançon, D. Rousseau, **M. Sereno**, M. Ammi, T. Isenberg. **Towards an Understanding of Augmented Reality Extensions for Existing 3D Data Analysis Tools**. In Proc. CHI, 2020.

2019   **M. Sereno**, L. Besançon, T. Isenberg. **Supporting Volumetric Data Visualization and Analysis by Combining Augmented Reality Visuals with Multi-Touch Input**. In Proc. EuroVis, pages 21–23, 2019. Poster.

2019   X. Wang, L. Besançon, F. Guéniat, **M. Sereno**, M. Ammi, T. Isenberg. **A Vision of Bringing Immersive Visualization to Scientific Workflows**. CHI-IA Workshop on Immersive Analytics at ACM, 2019.

2019   L. Besançon, **M. Sereno**, L. Yu, M. Ammi, T. Isenberg. **Hybrid Touch/Tangible Spatial 3D Data Selection**. Computer Graphics Forum, 38(3):553–567, June 2019.

2018   **M. Sereno**, B. Köhler, B. Preim. **Comparison of Divergence-Free Filters for Cardiac 4D PC-MRI Data**. Bildverarbeitung für die Medizin (BVM), 2018, Erlangen, Springer Verlag.

2017   **M. Sereno**, M. Ammi, T. Isenberg, L. Besançon. **Combining tactile and tangible input for 3D selection**. In Proc. Interaction Homme-Machine, 2017.

2016   **M. Sereno**, M. Ammi, T. Isenberg, and L. Besançon. **Tangible brush: Performing 3D selection with portable and position-aware devices.** In IEEE VIS Poster Compendium, 2016

2016   **M. Sereno**, S. Lupone, M. Debiossac, N. Kalashnyk, P.Roncin. **Active correction of the tilt angle of the surface plane with respect to the rotation axis during azimuthal scan.** Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms, Sep 2016, 382:123-126 <arXiv:1601.03598>

Presentation

Invited

2021   **Presentation of my PhD project**, *ExSitu, Inria, France.*
Presented my work in front of ExSitu about my PhD project **Collaborative Data Exploration and Discussion with Augmented Reality Support**.

2020   **International Visit**, *HZG, Germany.*
Visited the lab "Helmholtz-Zentrum Geesthacht Centre for Materials and Coastal Research" in Germany. Presented my work in-progress after two years of PhD to the department "Operational Systems", with whom I collaborated, which is dedicated to observe the coastal ocean.

Journal and Conference Paper Presentations

2022   **Full Paper Presentation**, *IEEE EuroVis*, Rome (Italy).
Presented our publication **Hybrid Touch/Tangible Spatial Selection in Augmented Reality**.

2021 **Full Paper Presentation**, *IEEE VR*, Virtual Conference.
Presented our TVCG publication **Collaborative Work in Augmented Reality: A Survey**.

2019 **International Paper Presentation**, *AFIHM*, Grenoble (France).
Presented to the french Human-Computer Interaction community our international publication **Hybrid Touch/Tangible Spatial 3D Data Selection** presented at EuroVis 2019.

2019 **Full Paper Presentation**, *IEEE EuroVis*, Porto (Portugal).
Presented with Lonni Besançon our publication **Hybrid Touch/Tangible Spatial 3D Data Selection**.

Poster Presentations

2020 **Poster Presentation**, *IEEE VIS*, Virtual Conference.
Presented our poster **Tangible Volumetric Brushing in Augmented Reality**.

2020 **Poster Presentation**, *IEEE VIS*, Virtual Conference.
Presented our poster **Subjective Views in Co-Located Augmented Reality–Initial Designs**. Awarded as "Best-Design Poster".

2019 **Poster Presentation**, *IEEE EuroVis*, Porto (Portugal).
Presented our poster **Supporting Volumetric Data Visualization and Analysis by Combining Augmented Reality Visuals with Multi-Touch Input**.

Other

2021 **PhD defense**, *LISN, Universté Paris-Saclay, Orsay, France*.
Defended my PhD thesis titled **Collaborative Data Exploration and Discussion Supported by Augmented Reality** on December 2021.

2020 **Doctoral Colloquium**, *IEEE VIS*, Virtual Conference.
Presented to the international visualization community my PhD topic after two years of study to get feedback from experts.

Reviews

2022 Review one journal paper for ACM Journal on Computing and Cultural Heritage.

2022 Review two conference papers for Proc. VR 2023.

2022 Review two conference papers for Proc. CHI 2023.

2022 Review two conference papers for Proc. SIGGRAPH Asia 2023; Extended abstract.

2022 Review one conference paper for Proc. ISMAR 2022.

2022 Review one journal paper for the International Journal of Human-Computer Interaction (IJHCI) and its resubmission.

2022 Review one journal paper for IEEE Transaction on Visualization and Computer Graphics.

2021 Review one conference paper for Proc. VR 2022.

2021 Review two conference papers for Proc. CHI 2022.

2021 Review one conference paper for Proc. ICMI 2021.

2021	Review one journal paper and its "resubmission as new" for IEEE Transaction on Visualization and Computer Graphics.
2021	Review one conference for Proc. CHI 2021; Late-Breaking Work.
2020	Review one conference paper for Proc. VR 2021.
2020	Review one conference paper for "Conférence International Francophone sur l'Interaction Homme-Machine" (Proc. IHM) 2021.
2020	Review one journal paper for IEEE Transaction on Visualization and Computer Graphics.
2020	Review one journal paper for Proc. VR 2021.
2020	Review one conference paper for Proc. ICMI 2020.
2020	Review one conference paper for Proc. MobileHCI 2020.
2020	Review one conference paper for Proc. CHI 2020; Late-Breaking Work.
2019	Review one conference paper for Proc. VR 2020.

Work Experiences

2018
6 months

End of study Internship, SAFRAN ELECTRONICS & DEFENSE, Eragny-Sur-Oise (France).

The internship is my end of study internship, started in March 2018 and finishes in September 2018. Safran Electronics & Defense was developing a library for 3D map visualization based on geographic datasets. They can visualize multi types of images mapped into a 3D ground, like satellite images, topography maps, drone's video camera stream, and add 3D items to better understand the map they are visualizing (called symbols). My mission was to provide Virtual Reality functionalities into the existing library. I have to propose manipulation paradigms and resolve visualization issues that VR headsets introduce, especially the Oculus DK2 they gave me.

Detailed achievements :

○ C

○ OpenGL

○ OpenCL (Stereoscopy with a computed image and its associated depth map)

○ Low level virtual reality functionalities (radial distortion, chromatic aberration, stereoscopy, constellation tracking system).

○ Low level UNIX programming (sockets, ioctl)

○ Android SDK (enhance the VR headset with a smartphone as a remote controller)

2017 3 months	**Internship**, UNIVERSITY OF MAGDEBURG, Magdeburg (Germany). The internship was done under the supervision of Benjamin Köhler. I had to implement algorithms to denoise 4D PC-MRI of blood flow, in order to add this pre-process on the software B. Köhler is working on.

Detailed achievements:

○ Employed

- C/C++
- OpenMP
- Qt
- OpenGL

○ Scientific writing

○ Successful scientific publication

2016 6 months	**Freelance**, *INRIA*, Orsay (France). While still studying at Polytech Paris-Sud during my 3rd and 4th year, I had the chance to work at INRIA under the supervision of Dr Lonni Besançon and Dr Tobias Isenberg. The work I have done resulted in publications in 2016 and 2019 regarding the Tangible Brush project.

Detailed achievements:

○ Employed

- C/C++
- Java
- Android SDK/NDK
- TCP/IP, UDP/IP
- OpenGL

○ Successful scientific publications

2015 1 month	**Internship**, *ISMO*, Orsay (France). During my 2nd year at Polytech Paris-Sud, I have done my internship at ISMO (Institut des Sciences Moléculaires d'Orsay) under the supervision of Dr Philippe Roncin. The topic was about how to measure and correct the effects of the tilt angle between the normal of a surface and its rotation axis while performing an atom diffraction.

Detailed achievements:

○ Platform Arduino

○ Math model for the tilt angle for atom diffraction.

○ Successful scientific publication

2014–2017	**Student work**, *KFC*, Vitry-Sur-Seine (France). While studying, I worked at KFC as a polyvalent employee. I worked for 10 to 15 hours per week besides my studies.

Teaching

2021–2022   **Informatique Graphique 3D**, ECOLE POLYTECHNIQUE PARIS-SACLAY.
Teaching Assistant *Informatique Graphique 3D* for third year students, based on C++ and OpenGL 3.X APIs.

2021–2022   **Introduction to Computer Graphics**, POLYTECH PARIS-SACLAY, ET3.
Teaching Assistant *Introduction to Computer Graphics* for third year students, based on C++ and OpenGL 3.X APIs.

2020–2021   **Introduction to Computer Graphics**, POLYTECH PARIS-SACLAY, ET3.
Teaching Assistant *Introduction to Computer Graphics* for third year students, based on C++ and OpenGL 3.X APIs.

2020–2021   **C++ algorithm**, POLYTECH PARIS-SUD, Peip1.
Teaching Assistant *algorithm and C++* for first year students.

2019–2020   **C++ algorithm**, POLYTECH PARIS-SUD, Peip1, ET3.
Teaching Assistant *algorithm and C++* for first and third year students.

2019–2020   **Introduction to Computer Graphics**, POLYTECH PARIS-SACLAY, ET3.
Teaching Assistant *Introduction to Computer Graphics* for third year students, based on C++ and OpenGL 3.X APIs.

2019–2020   **Principes d'Interprétation des Langages**, UNIVERSITÉ PARIS-SACLAY, L2.
Teaching Assistant. Introduced the concept of interpreting languages for second year students. The class focuses on the lexical and grammatical aspects of the interpreter. Introduction to Lex and Yacc.

2018–2019   **C++ algorithm**, POLYTECH PARIS-SUD, Peip1, Peip2, ET3.
Teaching Assistant *algorithm and C++* for first, second, and third year students.

2018–2019   **Introduction to Computer Graphics**, POLYTECH PARIS-SUD, ET3.
Teaching Assistant *Introduction to Computer Graphics* for third year students, based on C++ and OpenGL 3.X APIs.

2018–2019   **Introduction to Oriented-Object Programming**, POLYTECH PARIS-SUD, ET3.
Teaching Assistant *Introduction to Oriented-Object Programming* in Java for third year students.

Supervision

2020   I supervised Stéphane Gosset during a 6-months internship. Stéphane is a former M2 student who studied Human-Computer Interactions at the Université Paris-Saclay. With him, we studied the pros and cons of using a tangible multi-touch tablet for volumetric selections in an Augmented-Reality environment using Head-Mounted Displays as supports.

Awards

2020   **Best Poster Design Award** at Proc. IEEE VIS 2020 for the SciVis track for the poster *"Subjective Views in Co-Located Augmented Reality–Initial Design"*

2017   TOEIC (905)

Computer-Science skills

Languages	Java, C/C++, C#, Python, HTML5/CSS3, pHp, Javascript, R
GUI	Qt, Gtk, Swing, WPF, VueJS
Graphics	OpenGL, Unity3D, AR/VR, Volume Rendering, Shaders, D3
Compilation	Bison, Flex, compilation skills
Tools	Valgrind, GDB, GCC, G++, Junit, Gît, Apitrace, Jest
Parallelism	OpenCL, CUDA, OpenMP
Network	Socket, TCP/IP, UDP/IP, Knowledge of OSI model, 4G, Ethernet, and Wifi.
Mobile	Android SDK/NDK, UWP
Office	Pack Microsoft Office, LATEX
OS	Unix, Linux, Windows
Platforms	PC, Android, Arduino, Microsoft's HoloLens
HCI Fields	Pointing, CSCW, AR, User Studies

Additionnal Training

Scientific	**21h**	Interactive Information Visualization
	30h	Simulations numériques et calcul haute performance: Applications à l'hydrodynamique pour l'astrophysique
Professional	**12h**	Ethics & STICs
	7h	Les bases pour le doctorant-Enseignant débutant
	15h	Techniques for Scientific Writing and Associated Softwares
	14h	Mieux communiquer pour présenter son projet de recherche

Languages

French	**Mothertongue**
English	**Professional**
Portuguese	**Intermediate**
Spanish	**Basic**