

Mickaël Sereno

Curriculum Vitae

2 rue de chablis, RDC porte de droite, A002
91940 Les Ulis
☎ 0627812161
✉ serenomickael@gmail.com

PhD student at Inria working on *Collaborative Data Exploration and Discussion with Augmented Reality Support*

Education

- 2018–2021 **PhD**, *Inria, University of Paris-Saclay*, Saclay.
PhD student at Inria working on *Collaborative Data Exploration and Discussion with Augmented Reality Support*
- 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

Publications

- 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.

4D PC-MRI enables the captures of time-resolved blood flow velocity in 3D space. The captures though introduce noises and hence is not precise enough for medicine purposes. The paper describes a comparison of four denoising algorithms both in qualitative and quantitative ways. I have worked on this project under my three-months internship done in May 2017.

- 2016 M. Sereno, M. Ammi, T. Isenberg, L. Besançon. **Tangible Brush: Performing 3D Selection with Portable and Position-aware Devices**. IEEE VIS2016, Oct 2016, Baltimore, United States. <hal-01372925> and 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, October 2016

The work describes a new design for 3D spatial selection using a 6 - Degree Of Freedom tangible controller with touch input. By using the Tango tablet provided by Google, you can select 3D region by drawing a rectangle on the tablet screen and brush it using the 6-DOF of the tablet, which is suitable for unstructured datasets. The 3D result can be seen on a separate screen. The continuity of this work, which includes boolean operations (union, intersection, subtraction), possibility to draw 2D lasso and a user study, is currently in publication.

I was studying in parallel at Polytech Paris-Sud during my 3rd and 4th year while working on this project. My main contribution was the programming part, supervised by Dr Lonni Besançon and Dr Tobias Isenberg.

- 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>

The work describes how to measure and correct the effects of the residual tilt angle τ between a flat surface and its azimuthal rotation axis while doing an atom diffraction. The publication was done under my one-month internship done in May 2015.

Experiences

2018 **End of study Internship**, SAFRAN ELECTRONICS & DEFENSE, Eragny-Sur-Oise (France).
6 months

The internship is my end of study internship, started in March 2018 and finishes in September 2018. Safran Electronics & Defense is 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 is 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 current achievements :

- C
- OpenGL
- OpenCL (Stereoscopy with a computed image and its associated depth map)
- Low level virtual reality rendering (radial distortion, chromatic aberration, stereoscopy, tracking of IR leds, etc.).
- Low level UNIX programming (sockets, ioctl)
- Android SDK (enhance the VR headset with a smartphone as a remote controller)
- Embedded programmation (enhance the smartphone with IR leds for tracking) (IN PROGRESS)

2017 **Internship**, UNIVERSITY OF MAGDEBURG, Magdeburg (Germany).
3 months

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 **Freelance**, INRIA, Orsay (France).
6 months

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 a publication in 2016 and a possible one for the coming years about the continuity of this one.

Detailed achievements:

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

2015 **Internship**, ISMO, Orsay (France).
1 month 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

- 2018 **C algorithm**, POLYTECH PARIS-SUD.
Teaching *C algorithm* for first year students.
- 2018 **Introduction to Computer Graphics**, POLYTECH PARIS-SUD.
Teaching *Introduction to Computer Graphics* for third year students.
- 2018 **Introduction to Oriented-Object Programming**, POLYTECH PARIS-SUD.
Teaching *Introduction to Oriented-Object Programming* in Java for third year students.

Awards

2017 TOEIC (905)

Computer skills

Languages Java, C/C++, C#, Python, HTML5/CSS3, pHp, Javascript
GUI Qt, Gtk, Swing, WPF
Graphics OpenGL, Vulkan (in progress), Unity3D, AR/VR
Compilation Bison, Flex, compilation skills
Tools Valgrind, GDB, Junit, Git
Parallelism OpenCL / OpenMP
Network Socket, TCP/IP, UDP/IP. Knowledge of OSI model, 4G, Ethernet and Wifi.
Mobile Android SDK/NDK
Office Pack Microsoft Office, L^AT_EX
OS Unix, Linux, Windows
Platform PC, Arduino

Languages

French **Mothertongue**
English **Professional**
Portuguese **Intermediate** *The language I speak with my family in Portugal. Read and speak everyday-words.*

Spanish **Basic**

Interests

- Reading Fiction Series / Fantasy
- Programming
- Video games
- Swimming