393 rue Léon Gambetta
Floor 4 Appt 32
59000 Lille, France
+33 6 33 27 59 28
ax.antoine@gmail.com
axantoine.com
axantoine
27 years old

# Axel Antoine

I am a PhD student at the University of Lille, France, interested in Human Computer Interaction, currently doing my PhD with Géry Casiez and Sylvain Malacria in the Loki team at Inria Lille - Nord Europe in France until January 8th 2021. While I can adapt to many situations and technologies, I have mostly worked on force based techniques to control autoscroll on mobile devices and desktop computers, on latency compensation techniques on desktop computers using hardware improvements and on mobile devices through software solutions within Chromium and on 3D staging techniques to ease the production of vector-based illustrations.

## Experience and projects

### Main projects

2019 (14 weeks) **Spatial Jitter compensation in Chromium**
*Software Engineer Intern, Chrome, Input Dev team, Google, Kitchener, ON, Canada*
Design, implementation and evaluation of a spatial jitter technique caused by asynchronous input and output rates experimented on displays with 90Hz and more. The project required to compensate for the jitter in real time for specific devices (e.g. Pixel 4) using input events resampling without impacting performance and precision. The technique is actually implemented and used in Chrome for Android. See publication for details.
C++

2017 (6 months) **TurboMouse**
*Master's Degree internship, Mjolnir team, Inria Lille Nord Europe, Villeneuve-d'Ascq, France*
Design, implementation and evaluation of a latency compensation technique on desktop computers using a high frequency accelerometer embedded in the mouse. This project required specific optimizations to synchronize multiple input sources streams and compute trajectory predictions in real-time. See publication for details.
C++, Qt Framework

2016 (3 months) **ForceEdge**
*Bachelor's Degree internship, Mjolnir team, Inria Lille Nord Europe, Villeneuve-d'Ascq, France*
Design, implementation and evaluation of autoscroll interaction techniques on both desktop and touch-based force sensitive devices. This project required to design a cross-platform technique deliver the same user experience on both desktop and mobiles force-sensitive input surfaces. See publication for details.
Objective-C, iOS, macOS

### PhD related projects

2018 **Esquisse : Vector-based rendering from 3D scene within Blender**
*PhD, Loki team, University of Lille, Inria Lille Nord Europe, Villeneuve-d'Ascq, France*
Design, implementation and evaluation of 3D staging techniques to facilitate the production of vector-based illustrations. Esquisse is developped as a Blender add-on, proposing 3D interaction techniques to ease the manipulation of 3D objects and embeds an innovative vector-based NPR rendering engine based on state of the art rendering techniques. See publication for details.
Blender, python, C++, CGAL Library

### Education related projects

2017 **360 Video player**
*Master's Degree project*
Implementation of a 360 video player in a Web browser using WebGL 2.0.

2016 **Virtual Reality Navigation Technique**
*Master's Degree project, A. Antoine and X. Streel*
Implementation of a virtual reality navigation technique in Unity3D with Occulus Rift using the iPhone 6S inboard gyroscope for orientation control and the force sensitive touchscreen for speed control.

## Education

2017 - 2021 (*ends Jan. 8th*)
**PhD, Computer Science, Human Computer Interaction**
*CRIStAL, Université de Lille, Sciences et Technologies, France*
*Loki team, Inria Lille Nord Europe, France*

2016 - 2017
**Master's Degree, Computer Science (M2)**
*Université de Lille, Sciences et Technologies, France, 15.49 / 20, Good Honors*
Speciality Image, Vision, Interaction (IVI)

2015 - 2016
**Master's Degree, Computer Science (M1)**
*Université de Lille, Sciences et Technologies, France, 16.13 / 20, ranking 2 / 139, Exceptional Honors*

2014 - 2015
**Bachelor's Degree, Computer Science**
*Université de Lille, Sciences et Technologies, France, 15.14 / 20, Good Honors*

2012 - 2014
**Technology Degree, Computer Science**
*IUT A, Université de Lille, Sciences et Technologies, Villeneuve-d'Ascq, France*

## Teachings

2018 - 2020
64H
**Teaching : HCI**
*IUT A, Université de Lille, Sciences et Technologies, Villeneuve-d'Ascq, France*
Courses and Practicals on "Introduction to HCI" with Java.

2018 - 2020
64H
**Teaching : OpenOffice**
*IUT A, Université de Lille, Sciences et Technologies, Villeneuve-d'Ascq, France*
Praticals on OpenOffice calc.

2015
72H
**Support Teaching**
*IUT A, Université de Lille, Sciences et Technologies, Villeneuve-d'Ascq, France*
Helping students in difficulties to understand and practice oriented object concepts with Java.

## International Conference Publications

UIST'20 (*to appear presenter*)
**Modeling and Reducing Spatial Jitter caused by Asynchronous Input and Output Rates**
*Axel Antoine, Mathieu Nancel, Ella Ge, Jingje Zheng, Navid Zolghadr and Géry Casiez*
Proceedings of UIST'20, the 33rd ACM Symposium on User Interface Software and Technology, ACM
[doi] [pdf] [sources]

Interact'19
**Esquisse: Using 3D Models Staging to Facilitate the Creation of Vector-based Trace Figures**
*Axel Antoine, Sylvain Malacria, Nicolai Marquardt and Géry Casiez*
Proceedings of Interact'19, the 17th IFIP TCI3 Conference on Human-Computer Interaction, Springer
[doi] [pdf] [video] [sources]

CHI'18 (*presenter*)
**Using High Frequency Accelerometer and Mouse to Compensate for End-to-end Latency in Indirect Interaction**
*Axel Antoine, Sylvain Malacria, and Géry Casiez*
Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems, ACM
[doi] [pdf] [video] [presentation] [sources]

CHI'17
**ForceEdge: Controlling Autoscroll on Both Desktop and Mobile Computers Using the Force**
*Axel Antoine, Sylvain Malacria, and Géry Casiez*
Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems, ACM
[doi] [pdf] [video]