

## Education

### Ph.D. | Computer Science

ISAE SupAero | Oct 2019–Now

- Research: Infrared, Computer Vision, Machine Learning
- 1<sup>st</sup> advisor: MICKAËL CAUSSE

### Ph.D. | Computer Science

Oct 2016–Sept 2019

ENAC | French Civil Aviation University

- Research: Eye tracking, Comp. Science
- 1<sup>st</sup> advisor: Christophe Hurter
- 2<sup>nd</sup> advisor: Vsevolod Peysakhovich
- Collaborators: Pourang Irani, Maria Jesus Lobo, Gabriel Jarry,...

### Engineering | Aeronautics

ENAC | Sept 2014–Sept 2016

- Aeronautics
- Computer Science

### M.Sc | Human-Computer Interaction

ENAC & UPS | Sept 2015–Sept 2016

- Double Degree with ENAC
- Computer Science
- User Interface & UX Design

### Engineering | Computer Science

EHTP | Sept 2012–Sept 2015

- Software Engineering
- Software Architectures
- Analysis & Conception - Requirements
- Software Security - Penetration Testing
- Web & Mobile Development
- Graduated with high distinction

### Bac + 2 | DEUG, Preparatory Classes

UH2 | Sept 2010–Sept 2012

- Mathematics
- Physics
- Low-Level informatics

## Coursework

### Aeronautics

- Navigation - Mechanics
- Air Traffic Control (Notions)
- Aircraft Systems - Airport Management

### Computation

- Deep learning - Computer vision
- Networks & Telecommunications
- Algorithms - Big data

### Stat/Math

- Probability & Statistics - Calculus
- Linear algebra - Linear models

## Experience

### ENAC HCI AERO | Engineer Intern

Apr 2016 - Sept 2016

- Worked on Remote Tower project
- Low and High fidelity Prototypes, Human-centered design for an air traffic control
- Developed human pupil detection software
- Developed a system to calibrate gaze for air traffic controllers
- Extended novel algorithms for regression

### DGAC-French Civil Aviation Authority | DTI

Summer 2015

- Work on Strip TIC project
- Developed a system that allows sending air traffic data on paper electronically

### Aerotechnics Industries | Engineer Intern

Summer 2014

- Code Review
- Errors detection, and analysis of a J2E system that schedules airplane tasks on ground.

### National Meteorology Authority | Engineer Intern

Summer 2013

- Developed a system for satellite imagery in binary mode
- Visualization of satellite images
- Web development

## Some Side Projects

| 2014 Contest Finalist

### | Innovation in Computer Science

- Developed and presented E-Babel, a social network Web and mobile app for documents, videos, and images sharing between University students.
- Augmented Reality

### 2016 Nanosatellite | Eye-Sat

- Worked on the development of the user interface of the Nanosatellite Eye-sat. An astronomical project for observing the Zodiacal light and the Milky Way.

### 2016 Mobile | Airport application

- implemented additional features of an airport app for scheduling tasks

### 2018 Mobile | 2D Game

- Developed and deployed 2D mobile Games on Playstore
- +10,000 downloads.

### 2019 LecsGo | Geo-location and public transport Mobile App

- Development of a geo-location mobile app that allows children to take public transports easily
- The app implements game-design elements and a gamification style.



## Teaching

### ENAC | Student instructor

2018 and 2019

- Field: Computer science | Human-Computer Interaction
- Credits: Visualization + Computer Graphics
- Lectures to class of 30+ students

## Skills

### Programming Languages </>

Experienced

C++ • C • r/Matlab • Assembler •

Proficient

C# • Java • PHP •

Web/Mobile

Basic languages •

HTML • CSS • Javascript • JQuery •

XML • JSON • Android • Mapping Apis •

Front-end Development • Symfony (2014)

Database

Languages: SQL • NoSQL (Notions) •

Software: MySQL • PostgreSQL •

Oracle • SQLite •

### APIs & Tools

Computer Vision

OpenCV • EmguCV •

Firebase •

Algorithms

Genetics • Heuristics • Regressions •

Big Data • Time series •

Software

LaTeX • Adobe Suite •

OS

Linux • Windows

IDEs

Visual Studio • Visual Studio Code •

Android Studio • IntelliJ • Eclipse •

### General

Languages

French • English • Spanish (Learning)

## Projects (non-research)

Augmented reality game with OpenCV •

Websites •

## Funding Awards

- Remote Tower Funding (2016-2019) •
- Honorific Diploma - ENAC (2017) •



## Papers / Posters

### Published/Accepted

- **Almoctar Hassoumi\***, Vsevolod Peysakhovich, & Christophe Hurter, 2019: "EyeFlow: Pursuit Interactions Using an Unmodified Camera" *International Conference ETRA* Denver, Colorado, USA
- **Almoctar Hassoumi\***, Vsevolod Peysakhovich, & Christophe Hurter, 2019: "Improving eye-tracking calibration accuracy using symbolic regression" *Journal Plos One* Cambridge, United Kingdom
- **Almoctar Hassoumi\***, & Christophe Hurter, 2019: "Eye Gesture in a Mixed Reality Environment" *International Conference VisiGrapp* Prague, Czech Republic
- **Almoctar Hassoumi\***, Pourang Irani, Vsevolod Peysakhovich, & Christophe Hurter, 2018: "PathWord: A Multimodal Password Entry Method for Ad-hoc Authentication Based on Digits' Shape and Smooth Pursuit Eye Movements" *International Conference ICMI* Boulder, Colorado, USA
- **Almoctar Hassoumi\***, Vsevolod Peysakhovich, & Christophe Hurter, 2018: "Uncertainty visualization of gaze estimation to support operator-controlled calibration" *Journal of Eye Movements research* Ifwill, Switzerland
- Johannes F Kruiger, **Almoctar Hassoumi\***, Hans-Jörg Schulz, AlexandruC Telea, & Christophe Hurter, 2018: "Multidimensional Data Exploration by Explicitly Controlled Animation" *Informatics* Basel, Switzerland

### Under review

- **Almoctar Hassoumi\***, Vsevolod Peysakhovich, & Christophe Hurter, 2020: "Gaze Estimation Polynomials Using Genetic Algorithms" In Review
- **Almoctar Hassoumi\***, Maria Jesus Lobo, Vsevolod Peysakhovich, & Christophe Hurter, 2020: "A novel Aircraft trajectories brushing technique" *UIST* In Review
- Gabriel Jarry, **Almoctar Hassoumi\***, & Christophe Hurter, 2020: "Aircraft trajectories data exploration" *InfoViz* In Review

### Talks

- 2018 - International Conference on Multimodal Interaction
- 2018 - International Joint Conference on Computer Vision, Imaging and Computer Graphics Theory and Applications
- 2018 - International Conference ACM Symposium on Eye Tracking Research & Application

## Awards

|                                     |           |
|-------------------------------------|-----------|
| Valedictorian in High School        | 2005-2010 |
| 3rd Place Mathematics Contest       | 2008      |
| 1st Place University                | 2011      |
| 1st Place University                | 2012      |
| 1st Place General Culture Contest   | 2012      |
| Dean's Felicitations x2             | 2011-2012 |
| Valedictorian in Engineering School | 2012-2013 |
| Salutatorian in Engineering School  | 2013-2014 |

## Outside Activities

Volunteering for an association - CLAE 2018-2019  
Sport: Soccer , Dance , Coding </>, Animation