Vincent CAVEZ

Curriculum Vitæ

25 years old
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2021-present	**PhD in Human-Computer Interaction** Paris-Saclay University
2018-2020	**Master in Mathematical Engineering and Biostatistics** - *with high honours* Paris-Descartes University (Statistics, Machine Learning, R, Python)
2018-2019	**University Degree in Creation and Development of Innovative Start-ups** Paris-Saclay University (Project management, Fundings, Business plan)
2014-2018	**Bachelor's Degree in Mathematics** - Modeling Specialization Paris-Saclay University (Analysis, Algebra, Projects with Python)

Work experience

Ph.D. Student - ILDA team (10/2021 - present) - Inria Saclay, 91400
Thesis: « Post-WIMP Interactive Data Manipulation » under the supervision of E. Pietriga and C. Appert
- ❖ State of the art of data manipulation techniques on WIMP and post-WIMP devices
- ❖ Development of a set of recurrent data wrangling actions on spreadsheet-like and programming tools
- ❖ Proposal of a gestures set for multitouch and pen inputs
- ❖ Prototype of an interface on a Wacom tablet to evaluate the pertinence and the collaborative potential of the gestures set for data wrangling tasks (javascript, D3.js)

Data Scientist Intern - INGIMA Lab (02/2020-03/2020 and 09/2020-12/2020) - Paris, 75002
- ❖ Project design : definition of objectives, organization of tasks, assessment of risks and constraints, planning of project monitoring (PowerPoint, Gantt Project, Teams)
- ❖ State of the art of devices to aid in finding objects for the visually impaired (Zotero, LaTeX)
- ❖ State of the art of object detection AI for embedded devices (Zotero, LaTeX)
- ❖ Manufacture of a prototype equipped with stereovision sensors (RaspberryPi)
- ❖ Creation of a database and training of an object detection AI (LabelImg, TensorFlow)
- ❖ Development of object detection, tracking, and 3D position estimation modules (Python, OpenCV)

Student-Teacher (EAP2) - Mondétour middle school (01/2016-07/2017) - Les Ulis, 91940
- ❖ Observation of teaching methods, preparation of Mathematics lessons and quizzes, dispensing of lessons, correction of quizzes, individual support throughout the school year

Other activities

Creartathon22 (Creative Hackathon) participant (07/2022) https://creartathon.com/
- ❖ Collaborative work with a designer, an artist, an AI engineer and an InfoViz engineer to create an intelligent interactive object in 5 days
- ❖ Development of functions for the AI and motor loop of the artifact (Python, Tensorflow, Arduino)
- ❖ Displaying of the work at Le BiS - ENSCI, 75012 Paris

LISN « PhD days » organizer and participant (06/2022)
- ❖ Organization of the venue, conception of the program and hosting during the event
- ❖ Presentation of my first year of thesis work in 5 minutes

Math Student Council treasurer (05/2017-05/2019)
- ❖ Bookkeeping, budget forecasting and optimization
- ❖ Organization of events, discussions with the university and external entities to obtain subsidies

Cryptics : R library for real-time cryptocurrency analysis (03/2021)
- ✤ Development of functions for the collection, manipulation and visualization of time series and their metadata (R, Tidyverse, rvest, tseries, xts, dygraphs)
- ✤ Creation and maintenance of a free access R library (devtools, Git)

« Statistical Analysis of the Harmonic Tools in W. A. Mozart's Piano Sonatas » (02/2021-Present)
- ✤ Contribution to a scientific study conducted by a double-degree student at the CNSMDP: participation in the creation of a database, univariate analyzes, statistical tests, regression models (R, Tidyverse)

Terpsichord: Computer Vision and AI tool for music production (01/2021-Present)
- ✤ Implementation of a manual gesture detection module, design and development of data processing and interpretation modules, and AI-assisted music generation (OpenCV, TensorFlow)
- ✤ Development tests on an embedded system (RaspberryPi, Shell Unix)

www.vincentkv.com: personal website (01/2021)
- ✤ Site design and creation of models, content development and maintenance, hosting and uploading on a dedicated server (WordPress, HTML)

Alcoach : Mobile application in the health sector (08/2018-Present)
- ✤ Development of the mathematical model and algorithms for the main functionality (Python)
- ✤ Production of a scientific publication « GSBU Model : A New Way to Predict the Evolution of Blood Alcohol Concentration in the Human Body » (Zotero, LaTeX)

La Clef des Champs: Original soundtrack for a short film (10/2018)
- ✤ Composition of 8 tracks with several inspirations, including Johann Sebastian Bach and France Gall
- ✤ https://lordaaron.bandcamp.com/album/la-clef-des-champs-ost

La Plume et la Pierre: Original soundtrack for a medium-length film (12/2016)
- ✤ Composition of 28 tracks in an experimental style, mixing synths, brass, organ and strings
- ✤ https://lordaaron.bandcamp.com/album/la-plume-et-la-pierre-ost

Programming languages	**Javascript** *(D3.js, p5.js)*, **HTML**, **CSS**, **Python** *(Librosa, OpenCV, TensorFlow, Scikit-learn, Pandas)*, **R** *(Tidyverse, Shiny, rvest, devtools)*
Creative softwares	Logic Pro X, Ableton (Max for Live), MuseScore, Audacity, LMMS, Final Cut Pro, iMovie, GarageBand
Operating systems	Linux, Mac OS, Windows, RaspberryPi OS
Certifications	**Machine Learning** Stanford Online High School **Data Manipulation at Scale: Systems and Algorithms** University of Washington	**Information Visualization: Programming with D3.js** New York University **HTML, CSS and Javascript for Web Developers** Johns Hopkins University
Languages	French : native tongue English : fluent / B2+ (TOEFL 2019 : 93/120)	Hobbies	Harpsichord, piano, music writing, DJ, concerts, cinema