Didier Dupertuis

Software engineer and data-scientist passionate about web technologies, data-viz, machine learning, history, politics and space exploration.

Relevant Experience

	Year	Experience	Location
EPFL	10/20 current	**Web Developer**, Digital Humanities Laboratory (EPFL) » Currently developing a website to explore 3D scan of cities, beginning with Sion in Switzerland: scanvan.dhlab.epfl.ch.	Lausanne, Switzerland
Unil	07/18 06/20	**Research Engineer**, Information Security and Privacy Lab (UNIL) » Developped a web-app to explore questions of kin genomic privacy: santeperso.unil.ch. » Participated in the creation of the kin genomic privacy algorithm behind the app. » Did the data-analysis for the upcoming scientific paper presenting the algorithm and a user experiment of the tool.	Lausanne, Switzerland
	04/17 03/18	**Data-management intern**, Swiss Federal Statistical Office (SFSO) » Created historicized geographical metadata to handle municipalities and regional data through time, now available as a web-app. » Developed software and processes for the reception and validation of new data. » Centralized unstructured excel regional data in a SQL database for my group.	Neuchâtel, Switzerland
UNIPOLY	11/16 06/16	**Treasurer and conference responsible**, UniPoly, student association for sustainability » In addition to my role as treasurer for the 2015 comittee, I organised a recruitment campaign and prepared 7 conferences/debates on sustainability topics as well as a visit of the Gösgen nuclear plant.	Lausanne, Switzerland

Education

	Year	Degree	Location
coursera	2017	**Neural Networks for Machine Learning**, coursera.org Certificate	Lausanne, Switzerland
Unil	2013 2016	**Master in Economics**, University of Lausanne (UNIL) » GPA Master: 5.26/6 » Relevant courses: Applied econometrics, Macroeconometrics, Behavorial economics, Dynamic macroeconomic models.	Lausanne, Switzerland
EPFL	2009 2013	**Bachelor in Computer Science**, EPFL » Third year exchange at the Royal Institute of Technology (KTH) in Stockholm. » Relevant courses: Software Engineering, Artificial intelligence, Time Series Analysis.	Lausanne, Switzerland

Skills

Technical

Web: ES6 Javascript, webpack, React, Node.js, Flask, Django, Sass
Data-vizualisation: d3.js, Three.js, matplotlib
Data-science: Jupyter, scikit-learn, pandas, R, Keras
Programming: Python, Scala, Java, SQL, C/C++
Other: Git, AWS, Mathematica, Matlab

Languages

French: Mother-tongue
English: Professional skills (C1)
German: Professional skills (C1)

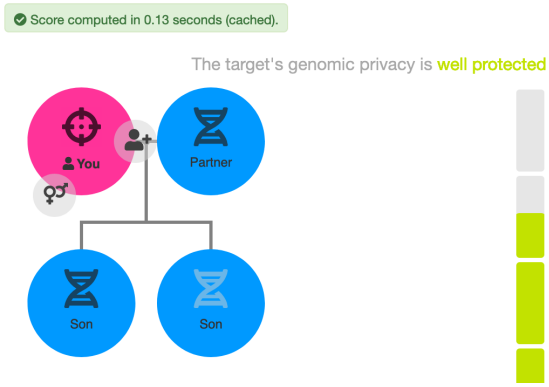
Projects

ScanVan Project: explore cities in 3D (WIP)

The ScanVan project at EPFL is exploring new ways to create digital 3D models of cities using innovative cameras and algorithms. I am currently developing a website to explore those 3D reconstructions, beginning with our first scan: the city of Sion. Work in progress.

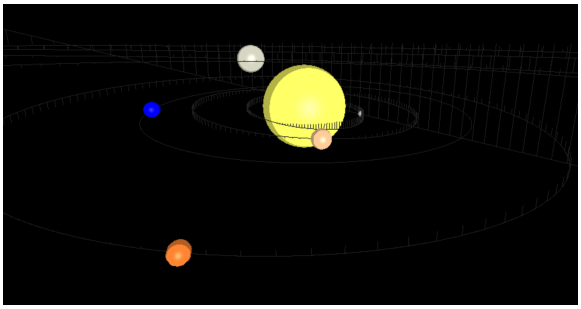
Kin Genomic Privacy Estimator

For 100$, anyone can get his genome tested by companies such as 23andMe. At the Information Security and Privacy Lab, I developed a website that allows to estimate how much of your genomic information remains hidden when member(s) of your family had their genome tested.



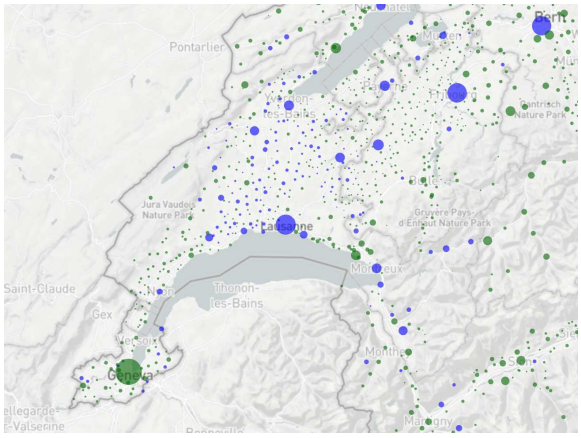
3D Solar System

To get familiar with orbital mechanics, our solar system and Three.js, I am having fun on this simple solar system animation. For now it uses descriptive Keplerian Orbits. It will soon be extended with proper Newtonian Mechanics, planets' moons data and nicer sprites (WIP).



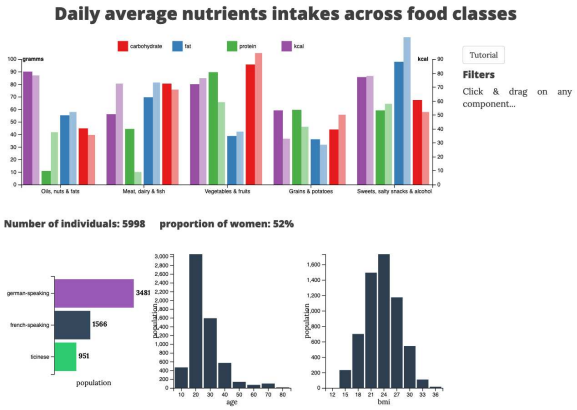
Population of Swiss municipalities over time

For this vizualisation, I extracted population data from texts of municipalities pages of the Historical Dictionary of Switzerland. Building upon the available data, I created a simple model to extrapolate the population of all municipalities until 1200.



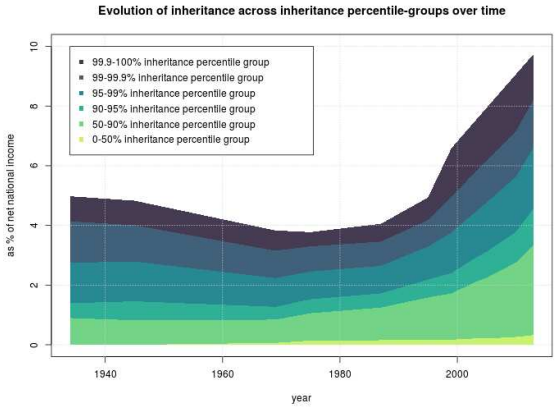
Personal Nutrition Data-viz Dashboard

This proof-of-concept personal nutrition data-vizualisation is a demo built for a nutrition research project where participants collect data on their food consumption. The interactive visualization allows participants to compare their nutrient intakes across food classes with the rest of the population.



Inheritance distribution in Switzerland

For my Master thesis, I used long-run wealth distribution and mortality data to reconstruct the distribution of bequest from 1934 to 2013 in a selection of Swiss cantons. The resulting time series shows that the distribution of bequests is less unequal that it was 80 years ago thanks to the rise of the upper middle class. Supervised by Pr. Marius Brülhart. [pdf report]



Publications

Year	Title
2018	**Inheritance Flows in Switzerland, 1911-2011**, Swiss Journal of Economics and Statistics » We estimate the annual inheritance flows and shares of inherited wealth in Switzerland over a long span of historical data, in close analogy to the study for France done by Thomas Piketty (QJE 2011). Coauthor with Élodie Moreau and Pr. Marius Brülhart.