

Hussein A. Houdrouge

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🌐 choudrouge4.github.io/about/ • 🎂 Date of Birth: 4 March 1995

Education

École Polytechnique (I'X) - Paris-Saclay University

Master (M2) - Master Parisian of Research in Computer Science,
Master (M1) - Algorithms and Foundations of Programming Languages.

Paris, France

Fall 2017 - Summer 2019

American University of Beirut (AUB)

Bachelor of Science in Computer Science awarded with Distinction,
Minor in Computational Science.

Beirut, Lebanon

Fall 2014 - Spring 2017

Bazourieh High School

Baccalauréat in Life Science awarded with Distinction.

Bazourieh, Lebanon

2013

Research Interests

Combinatorial Optimisation, Computational Science, Discrete and Computational Geometry, Graph Theory, and Complexity Theory.

Publications

Subquadratic High-Dimensional Hierarchical Clustering

Joint work with Vincent Cohen-Addad and Amir Abboud. To appear in the proceedings of the conference on Neural Information Processing Systems (NeurIPS) 2019.

Experience

Computer Science Laboratory of the Sorbonne University (LIP6) - RO Team

Worked on Design, Analysis, and Implementation of Geometric Approximation Algorithms
(Hierarchical Clustering Algorithms which have applications in Data Science).

Paris, France

Spring 2019

LORIA/INRIA Grand Est Research Intern - Alice Team

Worked on Shape Optimisation using Laguerre Diagram (Topological Optimisation).
Final Report: https://choudrouge4.github.io/pdfs/m1_research_Internship_report.pdf

Nancy, France

Spring 2018

Future Developer Summer Camp - AUB

Participated as an instructor in teaching Java programming language for school students.

Beirut, Lebanon

Summer 2017

Social Integration of PWD in Mini-Paralympics

Worked with in a team on the design and the implantation
of Mini-Paralympics across different areas in Lebanon.

Lebanon

Winter 2017

Fundación Promoción Social de la Cultura (FPSC)

Planned a social media strategy for Soccer Social School project
(between FPSC, Real Madrid Fondation, and the Ministry of Education).

Mount Lebanon

Summer 2016

Scholarships and Certificates

United States Agency for International Development - USAID

Awarded full scholarship to study BSc. in Computer Science at
the American University of Beirut.

Beirut, Lebanon

Fall 2013 - Spring 2017

ACM - LCPC The Lebanese Collegiate Programming Contest

Won the first place (team 1729).

Beirut, Lebanon

Fall 2016

American University of Beirut

Placed Four times on the Dean's Honour List.

Beirut, Lebanon

Fall 2014 - Spring 2017

Projects

Optimising Low Auto-correlation Binary Sequences**Paris, France**

Implemented and compared the performance of several discrete optimisation

2019

Algorithms to find Low Auto-correlation Binary Sequences.

Source Code: <https://github.com/CHoudrouge4/osh>**Scalable Nearest Neighbour Search Algorithms for High Dimensional Data****Paris, France**

Implemented and studied the performance of several Data Structures

2018

that compute the approximate nearest Neighbour Search in High Dimensional Data.

Source Code: <https://github.com/CHoudrouge4/SNNAHDD>**Computing Geodesic Distance Based on Heat Flow****Paris, France**

Implemented a technique based on heat flow to compute the geodesic distance over meshes.

2017

The implementation is based on this paper

<https://www.cs.cmu.edu/~kmc Crane/Projects/HeatMethod/index.html>Source Code: <https://github.com/CHoudrouge4/HeatMethodForGeodesicDistance>**Imgs****Beirut, Lebanon**

Implemented an Android mobile image search application based on

2017

Machine Learning and Deep Learning techniques for final year project.

Computer Skills

Programming Languages: Java, C, C++11, and Python.**Markup Language:** \LaTeX and HTML.**Misc:** Git, Cmake, Linux - Arch Linux, Ubuntu.**Frameworks and Libraries:** NTL, GMP, Hadoop, and MPI(open-MPI).

Languages

English: Fluent

French: Good

Arabic: Native

Volunteering

AUB-Center of civic Engagement and Community Service (CCECS)**Beirut, Lebanon**

Volunteered in teaching students having difficulties in their schools' courses with Nasma NGO.

Fall 2013 - Spring 2015

Volunteered in Beirut Marathon.

Participated in Juice for charity at AUB campus.

USAID, American University of Beirut**Beirut, Lebanon**

Collected Data about public school for D-rassati Project.

Fall 2013 - Spring 2015

Participated in sorting clothes in order to be distributed over Syrian refugee camps.

Volunteered in teaching mathematics to Palestinian students applying to SAT exam.

Interests and Activities

Artistic: Drawing.

Intellectual: Reading "[Goodreads account](#)".

Scientific: Mathematics and Physics.

Mind Sports: Competitive Programming.

Sports: Cycling.