

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.
Awarded with Honors.

Paris, France

Fall 2017 - Winter 2020

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

Publications

Subquadratic High-Dimensional Hierarchical Clustering

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

Experience

Department of Computer Science of the American University of Beirut

Working as a Research Assistant in Theoretical Computer Science.
Working as a Teaching Assistant for the Algorithms and Data Structures Course .

Beirut - Lebanon

Winter 2019 - Now

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

The Lebanese Collegiate Programming Contest ACM - LCPC

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

AUB-Center of Civic Engagement and Community Service (CCECS)

Awarded Two certificates for participating in several volunteering activities.

Beirut, Lebanon
2013 - 2017

Projects

Optimising Low Auto-correlation Binary Sequences

Paris, France

Implemented and compared the performance of several discrete optimisation Algorithms to find Low Auto-correlation Binary Sequences.
Source Code: <https://github.com/CHoudrouge4/osh>

2019

Scalable Nearest Neighbour Search Algorithms for High Dimensional Data

Paris, France

Implemented and studied the performance of several Data Structures that compute the approximate nearest Neighbour Search in High Dimensional Data.
Source Code: <https://github.com/CHoudrouge4/SNNAHDD>

2018

Computing Geodesic Distance Based on Heat Flow

Paris, France

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

2017

Imgs

Beirut, Lebanon

Implemented an Android mobile image search application based on Machine Learning and Deep Learning techniques for final year project.

2017

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, MPI(open-MPI), SFML, and openGL.

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.
Volunteered in Beirut Marathon.
Participated in Juice for charity at AUB campus.

Fall 2013 - Spring 2015

USAID, American University of Beirut

Beirut, Lebanon

Collected Data about public school for D-rassati Project.
Participated in sorting clothes in order to be distributed over Syrian refugee camps.
Volunteered in teaching mathematics to Palestinian students applying to SAT exam.

Fall 2013 - Spring 2015

Interests and Activities

Artistic: Drawing and Playing Piano.

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

Scientific: Mathematics and Physics.

Mind Sports: Competitive Programming and Chess.

Sports: Cycling.