

Hussein A. Houdrouge

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Date of Birth: 4 March 1995 ; Nationality: French/Lebanese

Education

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

Master (M2) - Parisian Master of Research in Computer Science (MPRI).

Master (M1) - Algorithms and Foundations of Programming Languages.

Awarded with Honors.

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

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

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, and Graph Algorithmic Theory 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

Beirut, Lebanon

Fall 2016

Won the first place (team 1729).

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

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

Paris, France
2019

Scalable Nearest Neighbour Search Algorithms for High Dimensional Data

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>

Paris, France
2018

Computing Geodesic Distance Based on Heat Flow

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>

Paris, France
2017

Imgs

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

Beirut, Lebanon
2017

Computer Skills

Programming Languages: Java, C, C++11, JavaScript, 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: Fluent

Arabic: Fluent

Volunteering

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

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.

Beirut, Lebanon
Fall 2013 - Spring 2015

USAID, American University of Beirut

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.

Beirut, Lebanon
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.