Marianne Rakic

Curriculum Vitae

Visiting Student (Master Thesis) at
Computer Science and Artificial Intelligence Lab,
Massachusetts Institute of Technology

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Education

M.Sc. Swiss Federal Institute of Technology in Zurich 2017-Present
Electrical Engineering and Information Technology
Current GPA: 5.77/6

B.Sc. University of Liege, Summa cum laude, 2014-2017
Bachelor in Engineering (major: Electrical engineering, minor: Physical engineering)
GPA: 18.57/20

Research Experience

Visiting Student, Data-Driven Inference Group, CSAIL, MIT, Cambridge, MA 04.2019 – Present
Advisors: Adrian V. Dalca, John Guttag & Ender Konukoglu
1. Anatomical Predictions using Subject-Specific Medical Data (Master Thesis): Design of a learning-based method to predict the brain anatomical changes. Use deformation fields to leverage an existing MRI brain scan of the subject and supplementary external data to make an accurate prediction.
2. Learning Conditional Deformable Templates with Convolutional Networks: Design a learning based algorithm to build (potentially conditional) templates using deformation fields.

Semester Project II, Computer Vision Lab, ITET, ETH Zurich, Switzerland 10.2018 – 01.2019
Advisors: Prof. Ender Konukoglu, Dr. Christian Baumgartner & Anna Volokitin,
In collaboration with the company Ava AG.
Analyze machine learning methods including Gaussian Processes, neural networks and Deep Gaussian Processes to classify sparse multi-dimensional time series.

Semester Project I, Computer Vision Lab, ITET, ETH Zurich, Switzerland 03.2018 – 07.2018
Advisors: Prof. Maryam Kamgarpour & Dr. David Adjiashvili
Build efficient strategies for firefighting in urban environment. Leverage mixed-integer programming and dynamic programming to tackle this task.

Teaching and Mentorship

Teaching Assistant, University of Liege, Liege, Belgium 09.2016-05.2017
MATH0013-1/MATH0002-4/MATH0502-1: Algebra, Mathematical Analysis I & Mathematical Analysis II. Prof. Éric JM Delhez

Teaching Assistant, University of Liege, Liege, Belgium 02.2017-05.2017
MATH0062-1: Elements of Probability. Prof. Louis Wehenkel

Publications

Adrian V Dalca, Marianne Rakic, John Guttag, and Mert R Sabuncu
"Learning Conditional Deformable Templates with Convolutional Networks"
NeurIPS: Neural Information Processing Systems (2019), Accepted, [Acc. rate: 21%].

Languages

French Native
English Advanced, 115/120 at TOEFL iBT test
German Intermediate, B2

Computer Skills

TensorFlow, Keras, Python, MATLAB, C, LaTeX CPLEX, and Microsoft Office.

Extra Curricular Activities

Visiting Student Association Board, Massachusetts Institute of Technology 05.2019-11.2019

President
Organization dedicated to enhancing the experience of the visiting students at MIT: orientation sessions, various events (over 150 attendees), managing a $10,000 budget, recruiting and applying for funding.

FAIL! Inspiring Resilience at MIT, Cambridge, MA 07.2019-10.2019

Member of organizing committee.
Event gathering very successful individuals to tell their stories from another angle. Aims at destigmatizing failure and foster creativity and productivity. Over 600 attendees.

English Language and Communication Course, Ceran Belgium, Spa 07.2017

English summer course to prepare for the TOEFL ibt exam.

Leadership Course, Saint Clares, Oxford 07.2016

English and leadership summer courses, group projects, and visit of Oxford.

English Junior Program, Converse International School of Languages, University of California, Berkeley 07.2014

English summer course, and visit of Berkeley and San Francisco.

Bucksmore Young Leaders, Corpus Christi College, Cambridge 07.2013

English and leadership summer courses, group project, and visit of Cambridge.

Home Tuition, Regent School, Oxford 07.2012

English summer course and discovery of Oxford.

Scholarship

Entrance Scholarship Fernand PISART 05.2014

Other Courses

CORe: Credential of Readiness, Pass with high honors, 02.2019-06.2019

Harvard Business School Online.

Listening and Speaking ; B2 (German), 5.75/6, 09.2018-12.2018

University of Zürich.

Python Programming: a Concise Introduction, 99.6%, 03.2018

Wesleyan University, Coursera.

Interests

Piano: I play classical music, alone or with other fellow musicians (piano, violin, flute). 2002-Present

Dancing: previously, classic, ragga and jazz; now, ballroom dances, and salsa. 2007-Present

References

Available upon request.