



# YASSINE MARRAKCHI

Ph.D. student

## CONTACT ME AT

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<https://github.com/YMarrakchi>

## PROGRAMMING SKILLS

Python

Matlab

C++

Pytorch

Tensorflow

Github

AWS

## LANGUAGES

Arabic (native)

French (native)

English

German

Spanish

## AWARDS & DISTINCTIONS

Tunisian government excellence scholarship  
(2009-2015) (2/23473)

International Mathematical Olympiads  
(2008)(407/535)

National Mathematics Championship  
(2008) (2/78)

## RESEARCH

### Representation Learning

- Fighting Class Imbalance with Contrastive Learning (MICCAI 2021)  
Yassine Marrakchi, Osama Makansi, Thomas Brox
- On Exposing the Challenging Long Tail in Future Prediction of Traffic Actors (ICCV 2021)  
Osama Makansi, Özgün Çiçek, Yassine Marrakchi, Thomas Brox

### Medical Image Analysis

- Recovering the Imperfect: Cell Segmentation in the Presence of Dynamically Localized Proteins (MICCAIW 2020)  
Özgün Çiçek\*, Yassine Marrakchi\*, Enoch Antwi, Barbara Di Ventura, Thomas Brox
- U-Net: deep learning for cell counting, detection, and morphometry (Nature Methods 2019)  
Thorsten Falk et al.

### Neural Architecture Search

- Autodispnet: Improving disparity estimation with automl (ICCV 2019)  
Tonmoy Saikia, Yassine Marrakchi, Arber Zela, Frank Hutter, Thomas Brox
- Understanding and robustifying differentiable architecture search (ICLR 2020)  
Arber Zela, Thomas Elsken, Tonmoy Saikia, Yassine Marrakchi, Thomas Brox, Frank Hutter

## WORK EXPERIENCE

### Ph.D. Candidate

Computer Vision Group, Freiburg | Oct 2017 - present

- Utilizing metric learning approaches to solve data imbalance issues
- Utilizing uncertainty estimation to refine instance segmentation in time series
- Analysis of gradient-based neural architecture search methods
- Customize gradient-based neural architecture search methods for dense regression

### Junior Research Engineer (Doctoral Program)

Robert Bosch GmbH | Oct 2016 - Sept 2017

- Semantic segmentation for open street views
- Network pruning and distributed computation (Spark)

### Teaching Assistant

Karlsruhe institute of Technology | Oct 2011 - Sept 2012

- Tutorials and homeworks of Algorithmics

## PROFESSIONAL SERVICES

- Reviewer for MICCAI 2020 & 2021, ICLR 2020 & 2021 (NAS workshop)
- Student supervision:
  - Hyperparameter optimization for biomedical image analysis (BSc thesis)
  - Synthetic-to-real image translation for 6D pose estimation (Msc thesis, cooperation with Gerhard Schubert GmbH)
- Teaching duties:
  - deep learning lab course (SS 2021)
  - Optimization (WS 2020-2021)
  - Statistical pattern recognition (SS 2019)
  - Engineering meets Biology (WS 2017-2018)
  - Deep Learning (SS 2017 @ University of Tübingen)

## EDUCATION

### Ph.D., computer science

Computer Vision Group, Freiburg | Oct 2017 - present

- Representation learning
- Neural architecture search
- Semantic/Instance segmentation
- Medical image analysis

### MSc., computer science (1.5/1.0)

Karlsruhe institute of Technology | Oct 2013 - Jul 2015

- Algorithmics
- Signal processing
- Operations research

### BSc., computer science (1.7/1.0)

Karlsruhe institute of Technology | Oct 2010 - Sept 2013

- Algorithmics
- Operations research