

# Théo Sourget

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## EDUCATION

### Université de Rouen

*Master in Data Science and Engineering, highest honors, Valedictorian*

Rouen, France  
2021-2023

### Université de Rouen

*Bachelor in Computer Science and Data Science, honors, Valedictorian*

Rouen, France  
2020-2021

### IUT de Vannes

*2 Years University Diploma in Computer Science*

Vannes, France  
2018-2020

## CURRENT & PREVIOUS EMPLOYMENT

### IT University of Copenhagen

*Research Assistant, Department of Computer Science*

Copenhagen, Denmark  
October 2023 – January 2025

- I assess the usage of non-relevant information in medical images (chest x-rays, eye fundus) by CNN models
- I studied the presence of public medical datasets in scientific papers and created open-access tools based on the research
- I defined and wrote a PhD funding application on the evaluation of multi-modal datasets and models
- I assisted in the data collection or data processing of other lab projects

### IT University of Copenhagen

*Assistant Lecturer, Department of Computer Science*

Copenhagen, Denmark  
January 2024 – July 2024

- I prepared and gave lectures to bachelor's students of the Project in Data Science course (Git, decision trees, ensemble of classifiers, common problems in machine learning projects)
- I designed the exercises for the practical sessions
- I coordinated the teaching assistants during the practical sessions

### IT University of Copenhagen

*Teaching Assistant, Department of Computer Science*

Copenhagen, Denmark  
October 2023 – January 2024

- I assisted students during practical sessions of the Data In the Wild Course (data processing, visualisation, web scraping)
- I assisted teachers in the preparation of the exercises

### Capgemini Engineering

*Data Scientist Intern, Medic@*

Illkirch-Graffenstaden, France  
April 2023 – September 2023

- I performed teeth detection, segmentation and numbering in X-ray dental panoramic to help diagnose rare diseases for both adults and children.
- I compared the performances of Mask-RCNN and Detection Transformer (DETR)
- I defined an algorithm to generate new dental panoramics using existing images and inpainting models
- I used different generative models (GAN, diffusion models) to generate new teeth

## UNIVERSITY PROJECTS

### Comparaison of U-Net and Segformer Architectures

Université de Rouen, 2022 – 2023

- I compared the U-Net and the SegFormer architecture on the segmentation of cardiac structure in ultrasound images
- I worked in collaboration with a PhD student to extend my study to other segmentation tasks

### Glaucoma detection with CNN

Université de Rouen, 2021 – 2022

- I classified eye fundus images for glaucoma detection with convolutional neural networks
- I evaluated the effect of different techniques for mitigating data imbalance, such as data augmentation, weighted loss and resampling

## PUBLICATIONS

- [Citation Needed] Data usage and citation practices in medical imaging conferences. **T. Sourget**, A. Akkoç, S. Winther, C. L. Galsgaard, A. Jiménez-Sánchez, D. Juodelyte, C. Petitjean, and V. Cheplygina. Medical Imaging with Deep Learning (MIDL), 2024.
- Detection transformer for teeth detection, segmentation, and numbering in oral rare diseases: Focus on data augmentation and inpainting techniques, H. Kadi, **T. Sourget**, M. Kawczynski, S. Bendjama, B. Grollemund, and A. Bloch-Zupan. International Conference on Computational Science and Computational Intelligence (CSCI), 2023.
- Can Segformer be a true competitor to U-net for medical image segmentation? **T. Sourget**, S. N. Hasany, F. Mériaudeau, and C. Petitjean. Medical Image Understanding and Analysis (MIUA), 2023.

## OTHER ACHIEVEMENTS

### **Presentations**

- **D3A Conference 2.0 2024 (Poster):** Mask of truth: model sensitivity to unexpected regions of medical images
- **"In the Picture: Medical Imaging Datasets" workshop (Oral):** [Citation Needed] Data usage and citation practices in medical imaging conferences
- **MIDL 2024 (Oral and Poster):** [Citation Needed] Data usage and citation practices in medical imaging conferences
- **D3A Conference 1.0 2024 (Poster):** [Citation Needed] Data usage and citation practices in medical imaging conferences
- **GRETSI 2023 (Poster):** Can Segformer be a true competitor to U-net for medical image segmentation?
- **Graduate School MINMACS reading group 2023:** Introduction to dynamic graph neural networks

### **Fundings**

- **DDSA visit grant** of 1645€ in 2023 to work with Dr Veronika Cheplygina at the IT University of Copenhagen
- **Graduate school MinMacs scholarship** of 15 000€ (funded by the Normandy region) during both the first and second year of my Master's degree, giving access to funding, a supervisor and an immersion in laboratories