Benjamin Missaoui

CS Master's student at Georgia Tech, looking for a 6-month internship starting between May and July 2023

WORK EXPERIENCE

Research Project, 3D computer vision

Georgia Tech Europe, Metz, France

Jan 2023 - now *(supervisor: Dr Cédric Pradalier)*
Research topic: a study of Neural Radiance Fields (NeRFs) for novel view synthesis of hyperspectral images.

• Studying the extension of NeRFs to semi-transparent objects.

Research assistant, Autonomous Vehicles

Heudiasyc Lab (UTC | CNRS), Compiègne, France

September 2022 - now *(supervisor: Dr Philippe Xu)*
Research topic: Car localization with centimeter-level accuracy
• Developing a deep learning based method for poles detection.
• Generating automatically labelled training data by projecting the poles from a map into the vehicle frame. Paper under review at IEEE IV 2023.

Feb 2022 - June 2022 *(5 months, supervisor: Dr Julien Moreau)*
Research topic: Partial LiDAR point clouds completion:
• Reimplemented, compared and deployed state of the art deep learning methods for partial LiDAR observations reconstruction.

ML Research Intern, Computer Vision

Scortex, Paris, France

July 2021 - Jan 2022 *(6 months, supervisor: Antoine Cordier)*

Research topic: unsupervised Anomaly Detection:
• Co-authored a heuristic to remove defective parts in a fully unlabelled dataset with 90+ AUC. Findings published here.
• Fine-tuned pre-trained networks with self-supervision to improve defect detection AUC from 91.6 to 96.1 points.

EDUCATION

Dual Master's degree in Computer Science

Georgia Institute of Technology, Atlanta, USA
From January 2023 to June 2024 (expected graduation date)
Relevant Coursework : ML, autonomous robotics, algorithm design

UTC | Sorbonne Universities, Compiègne, France
From September 2018 to June 2023 (expected graduation date)
GPA : 3.9/4.0
Relevant Coursework : Statistics, Intelligent vehicles, Data Mining

About me

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PUBLICATIONS

[1] B. Missaoui, M. Noizet, P. Xu
Map-aided annotation for pole base detection (2023)
Under review at IEEE IV 2023

[2] A. Cordier, B. Missaoui, P. Gutierrez
Data refinement for fully unsupervised visual inspection using pre-trained networks (2022)

PERSONALITY

Thorough, Hard-Worker, Organized, Communicative, Problem Solver, Team Player

SKILLS

Languages: Python, C/C++, R, ROS

Software engineering: code review, git, sprints, agile methodology

ML/DL frameworks: Numpy, Scipy, OpenCV, Kornia, Keras, sklearn, pandas, Tensorflow, PyTorch

PROJECTS

• reCAPTCHA solver (link: github)
• LiDAR-camera fusion for obstacle avoidance in autonomous cars

LANGUAGES

• French: native
• English: fluent (TOEFL: 110/120)
• Italian & German: elementary

INTERESTS

Music: Learning piano since 2019, member of the piano student club, member of the student orchestra
Other: Sport, Traveling