

# NATHAN ODIC

## Master Student, Polytechnique Montréal

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### EDUCATION

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#### Master of Science

September 2023 - Now

*Polytechnique Montréal, Québec, Canada*

Department of Computer Science

Advised by Prof. Lama Séoud

GPA : 3.85/4.0

Relevant coursework :

- IFT6135 - Representation Learning — A+
- INF8175 - AI : Methods & Algorithms — A

#### Diplôme d'Ingénieur (Master of Science)

September 2021 - July 2023

*École des Mines d'Alès, France*

Department of Computer Science

Advised by Prof. Baptiste Magnier

GPA : 3.37/4.0

Relevant coursework :

- Computer Vision — A

#### French Preparatory Classes

September 2019 - July 2021

*Lycée Georges Clemenceau, Nantes, France*

Mathematics and Physics

Intensive post-high school courses to enter France's "Grandes Écoles"

GPA : 4.0/4.0

### RESEARCH EXPERIENCE

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#### Graduate Research Student

January 2024 - Now

*VisionIC, Polytechnique Montréal, QC, Canada*

A project led by the National Research Council (NRC) of Canada's METALTec R&D group. Worked solely on the segmentation of RGB-Depth images under occlusion across multiple cameras, followed by the 3D reconstruction of segmented objects. Proposed RGB-D baselines for one- and two-step segmentation, achieving over 10% improvement in performance compared to state-of-the-art RGB methods.

Led to two peer-reviewed publications in international conference and journal.

#### Graduate Research Student

October 2021 - November 2023

*EuroMov Digital Health in Motion, Université de Montpellier, IMT Mines Alès, France*

Collaborative project with LIRMM, the joint research entity of the University of Montpellier, INRIA, and the French National Center for Scientific Research (CNRS). Worked in pairs on detection and tracking algorithms for fisheye videos. Developed a tracking algorithm that outperformed the state-of-the-art by over 2% while being twice as fast.

Led to two peer-reviewed publications in international conferences.

### EMPLOYMENT

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#### R&D ML Intern

May 2023 - July 2023

*SYD Digital Care, Nantes, France*

Department of Customer Interaction

Case study on the application of machine learning in contact center solutions, focusing on the development of various LLM fine-tuning and retrieval-augmented generation techniques for tasks such as customer request classification, satisfaction analysis, and emotion detection to ensure better customer care.

## ACADEMIC ACTIVITIES

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**Journal Reviewer:** Robotics and Computer-Integrated Manufacturing.

**Research Supervision:** Supervised an undergraduate student for a research project (Summer 2024).

## PUBLICATIONS

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(\* denotes equal contribution)

### Manuscripts in Review:

**SepInst: Separation-Aware RGB-D Instance Segmentation using Graphs** 2025

Nathan Odic, S.H.H. Zargarbashi, Sabrina Jocelyn, Lama Séoud

*IEEE Transactions on Image Processing* - Impact Factor: 10.8 - CiteScore: 20.9

(In resubmission)

### Peer Reviewed and Accepted:

**MuViH: Multi-View Hand gesture dataset and recognition pipeline for human-robot interaction** 2025

Corentin Hubert\*, Nathan Odic\*, Marie Noel, Sidney Gharib, S.H.H. Zargarbashi, Lama Séoud

*Robotics and Computer-Integrated Manufacturing* - Impact Factor: 9.1 - CiteScore: 24.1

**Collaborative Robotic Finishing Platform for Metal Part Processing Towards Industry 5.0** 2024

S.H.H. Zargarbashi et al.

*IEEE International Conference on Mechanical and Aerospace Engineering (ICMAE)* - Main Conference

(Accepted - To be published)

**FORT: Fisheye Online Realtime Tracking with an Improved Kalman Filter** 2023

Nathan Odic, Benoit Faure, Baptiste Magnier

*IEEE 25th International Workshop on Multimedia Signal Processing (MMSP)* - Main Conference

**Performance of Recent tiny/small YOLO Versions in the Context of Top-view Fisheye Images** 2022

Benoit Faure, Nathan Odic, Olfa Haggui, Baptiste Magnier

*International Conference on Image Analysis and Processing* - ISHAPE Workshop

## SKILLS

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### **Languages:**

- French (Native)
- English (C1 — TOEFL 104/120)
- Spanish (B2)

**Computer:** Python, PyTorch, TensorFlow, C.