

INTRODUCTION

Recent computer science graduate with an average GPA of 4.77/5.0. Currently working with machine vision at SICK Linköping. I was born and raised in Brazil, went to university in Sweden, and did a one-and-a-half-year exchange and master thesis in Switzerland. I am oddly good at learning languages, can easily adapt to new places and faces, and love watching football highlights.

PERSONAL

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Age: 24 (October 7, 1998)

Nationality: Brazilian

SUMMARIZED TECH-SKILLS

- I am most proficient in Python but I have also worked with C++, C, R, Lua, MATLAB
- Machine learning, computer vision
- Requirements engineering
- Pytorch, Tensorflow, Pandas, OpenCV, Numpy

LANGUAGES

Portuguese, Swedish: Native English: C2 French: C1

MATHEUS BERNAT

EDUCATION

EPFL, Exchange year & master thesis, September 2021 – ongoing Relevant courses: Applied data analysis, Visual intelligence, Statistics for data science, Image processing, Computers and music. Master thesis: Topic classification of images in Wikipedia (<u>link</u>). I am now working towards a scientific publication with researchers from EPFL and Stanford university.

Linköping University, **M.Sc. Computer Science**, Fall 2017 – Fall 2023 Relevant courses: Machine learning, Neural networks, Signal processing, Statistical sensor fusion, Computer vision, Advanced linear algebra.

PROJECTS

EPFL, Computer vision and Data analysis projects, Fall 2021

Compared the abilities of vision transformers and CNNs to detect semantic out-of-distribution data in the Visual intelligence class (<u>link</u>). Conducted data analysis on a dataset of 178 million quotations to understand who has a voice in the English-speaking media in the Applied data analysis class (<u>link</u>). Skills: Pytorch for object classification, Pandas, statistical data analysis, clustering, and Tensorflow for image classification.

Linköping University, Computer vision, Spring 2021

Completed two computer vision class projects: object tracking and 3D multiview reconstruction. Skills: Pytorch for bundle adjustment, multi-view geometry, statistics (Gaussian mixture models, Kalman filter).

Linköping University, Robotics, Fall 2018 – Spring 2021

Competed in service robotics in Sydney, Australia, at RoboCub@Home. Developed the NLP module responsible for making the robot talk. Skills: Python, ROS, teamwork.

WORK EXPERIENCE

SICK Linköping, Application engineer, January 2023 – ongoing

Working in the Application Development team, responsible for interfacing between the company's solutions and customers' needs. On a normal week at work, I provide technical support to customers, develop customized machine vision tools, and perhaps visit a customer site. Skills: Lua, Halcon, image processing, teaching, requirements.

Linköping University, Course & lab assistant Fall 2019 – Fall 2021

Responsible for writing and correcting tests, and for the general administration of the Elements of Al class. A total of 1,300 students have passed the course since I started. Corrected the four MATLAB labs of the 300 undergraduate students for the Signals and Systems class. Skills: Python scripts, MATLAB, teaching.

Software internships, Summer 2020 and Summer 2021

At <u>UMS Skeldar</u>, I worked with mathematical modeling of sea and ship motion, and simulation in MATLAB. The achieved simulations were used to develop simulations of UAVs further landing on moving ships. At Veoneer, I developed a new platform for the engineers to follow the course of one's commits, which today is used by the 200 engineers on the Linköping site. Skills: MATLAB, physical modeling, web development with Vue.js.