# International Master's Degree in VISUAL COMPUTING

The international Master's degree in Visual Computing is the second year specialty of Nantes Université's Master's degree in Computer Science. Through this programme, students will acquire the scientific and technological knowledge, as well as the practical experience, to understand and contribute to high-level innovative R&D processes in the field of visual computing.

The programme deals with computer processing of visual data. You will study the analysis, transmission and human perception of images and videos, the capture and representation of 3D content, pattern recognition, and human-computer interaction, based on visual data.

## Syllabus

### Third semester (30 ECTS)
(i.e. first semester of this second year of master)

• Research methodology - 3 ECTS
• Deep learning - 3 ECTS
• Cross-unit projects - 3 ECTS
• Deep learning for Computer Vision - 3 ECTS
• Immersive HCI - 3 ECTS
• Visual data representation and security - 3 ECTS
• 3D Data - 3 ECTS
• Image processing - 3 ECTS
• Quality of experience - 3 ECTS
• Visual Perception and Cognition - 3 ECTS
• French language and European culture - 0 ECTS

### Fourth semester (30 ECTS)
(i.e second semester of this second year of master)

• Internship - Master's thesis (minimum 5 months)

*Every student is guaranteed an internship within the research lab LS2N Laboratoire des Sciences du Numérique de Nantes, where they join the life and activities of a research group in data science, which collaborates with companies and academic partners. Alternatively, students may also seek an R&D internship in industry.*

### Hosting research lab

The laboratory of Digital Science of Nantes
*https://www.ls2n.fr*

LS2N — LABORATOIRE DES SCIENCES DU NUMÉRIQUE DE NANTES

## Academic calendar

Courses start in early September.



## Skills

> Modeling and solving image and video processing and analysis problems

> Exploiting high level knowledge about human visual perception in order to contribute state-of-the-art solutions for multimedia applications

> Using machine learning algorithms in order to build computer vision applications

> Understanding and implementing a 3D data processing chain (from acquisition to representation)

## Career Opportunities

The master's environment should facilitate future involvement in international PhD top level programmes.

The research teams are involved in high-level international research cooperations and have joint research projects with private companies. They actively contribute to projects in the Images and Network R&D cluster

### Business sectors
> Project engineer
> R&D engineer in visual computing
> Students in top level international PhD programmes

## POLYTECH NANTES

As the graduate school of engineering of Nantes Université, Polytech Nantes benefits from the scientific and educational environment of a university.

Polytech Nantes is the founding member of the Polytech group, a national network of 16 graduate engineering schools in France.

**20%**
foreign students

**+70**
Partner schools

# Admission

The Master's Degree is a two-year degree. At Polytech Nantes, only the second year is accessible, so applicants should hold a degree which is at least a 4-year degree in higher education (i.e. a 3-year Bachelor is not acceptable).

Applicants should be able to give evidence (from transcripts of their degrees) and show good knowledge in the following fields:
> software design, software development, software engineering
> mathematics (algebra, statistics and probabilities)
> signal processing, basic image processing
> machine learning

## Requirements

> Transcripts of records, GPA
> Ranking in the promotion (position of student/number of students)
> 87 TOEFL / 785 TOEIC / 5.0 IELTS / B2

## How to apply ?

> For students **coming from a Polytech Nantes partner university**, please contact your international coordinator who will deal with your enrolment.

> For students coming from a country that is **part of the Campus France procedure**, please enrol with Campus France *campusfrance.org/en/application-etudes-en-france-procedure*

> For students coming from a country that is **not part of the Campus France procedure**, please Complete the application form on our website (univ-nantes.fr/polytech/internationalmasters) and send us the following documents:
- a detailed CV in English (including the precise content of your studies, which topics were studied each year, obtained grades, international English test score, reports you may have written during your studies)
- a cover letter
- a complete transcript in English of all previous years of study at the University including your GPA and official ranking
- a copy of your passport

# Cost

The price includes the education and the training costs, as well as the French courses for foreigners, some cultural outings and the student social security*.
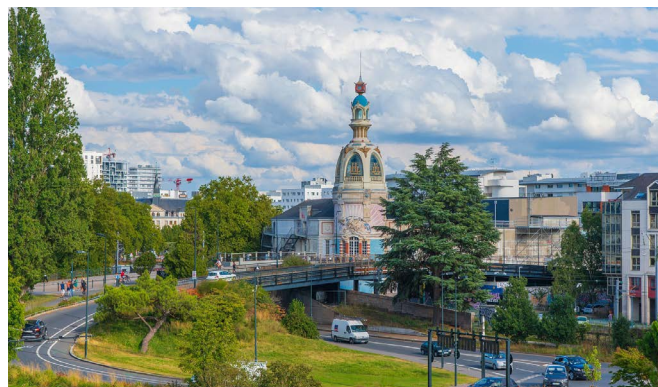
*It is included if you are less than 28 years old. If not, you will have to pay your own social security.*

More information :
https://polytech.univ-nantes.fr/en/financial-and-practical-information
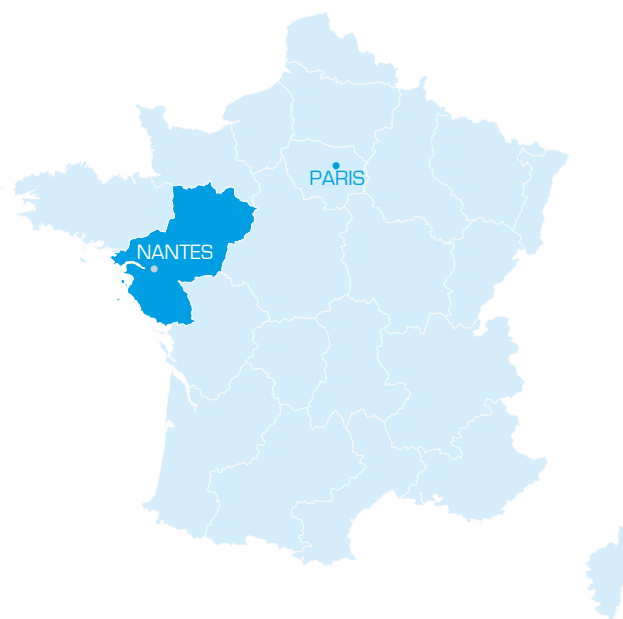
# Accommodation

The rent for students' accommodations may vary between €350 and €450 per month (allow for a deposit: usually 1 month rent). The housing market is saturated in September. It is highly recommended to seek accommodation in June or July. Expect to pay for insurance for any accommodation, as well as the housing tax for accommodation in town.

# Location

The programme is held in Nantes, on the Chantrerie Campus which hosts several Graduate Schools, with over 4,000 students, two university restaurants, as well as about 30 companies of advanced technology.

Greater Nantes (670,000 inhab.) is located close to the Atlantic Ocean and is regularly rated as one of the most pleasant French cities to live in. Thanks to its beautiful parks, efficient public transport and other policies for sustainable development, Nantes has been awarded the status of European Green Capital.

PARIS

NANTES

# Language

The programme is entirely taught in English, thus, a good command of the English language is required (B2 score as defined by the Council of Europe). Please, note that French students also apply.

## Contact

master-vico@univ-nantes.fr

polytech.univ-nantes.fr

POLYTECH NANTES

Pôle Sciences et technologie
Nantes Université