PICCO
ANDREA

Image and data analyst
Scientist

CONTACT

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Chemin de Vuillonnex 15,
1232 Confignon (GE), Suisse

EDUCATION

Doctor of Philosophy, PhD
University of Turin
2003 - 2006

Master's degree in Theoretical Physics
University of Turin
1998 - 2003

SKILLS

- Microscopy
- Image Analysis
- Problem solving
- Analytical skills
- Statistics
- Data Analysis
- Python
- Git

LANGUAGES

English: C1 **French**: C1

Italian: mother tongue

WORK EXPERIENCE

CONSULTANT 2024 - present
MIDA SCIENCE (CH)

I provide innovative Microscopy, Image, and Data analysis solutions for life sciences, assisting in the design, execution, and analysis of quantitative microscopy experiments. I collaborate with universities in Switzerland and Spain. MIDA SCIENCE: https://mida.science

COLLABORATEUR SCIENTIFIQUE II 2021 - 2024
UNIGE (CH)

I worked on a microscopy study comparing endocytosis in Ascomycota and Basidiomycota. I managed an imaging facility and characterized cell collectives by image analysis (Toret et al., Current Biology 2022). I collaborated with the LMB in Cambridge and the University of Bern on quantifying the number of molecules on fluorescent microscopy images (Wozny et al., Nature 2023; http://www.github.com/apicco/spotquant). UNIGE: University of Geneva.

MAITRE ASSISTANT 2015 - 2021
UNIGE (CH)

I developed an imaging method for nanometer-resolution of protein complexes in living cells (Picco, Irastroza-Azcarate, et al., Cell 2017), and I programmed a Python module for fluorescence microscopy data analysis (Picco and Kaksonen, Methods Cell Biol. 2017; repository: http://apicco.github.io/trajectory_alignment/). UNIGE: University of Geneva.

POSTDOC 2008 - 2015
EMBL (DE)

I engineered image analysis and experimental pipelines to integrate various microscopy techniques (epifluorescence, superresolution, electron microscopy) for analyzing the endocytic machinery in budding yeast (Kukulski et al., JCB 2011; Picco et al., eLife 2015; Kukulski, Picco, et al., eLife 2016; Picco, Kukulski, et al., MBoC 2018; Mund et al., Cell 2018). EMBL: European Molecular Biology Laboratory.

REFERENCES

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University Pompeu Fabra
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SKILLS

IMAGE AND DATA ANALYSIS

Extensive experience in image and data analysis. I apply analytical techniques to microscopic imaging data to extract and analyse quantitative information. I write custom Python, Matlab, and R software and design macros for Fiji. My expertise includes various image analysis, deconvolution, and reconstitution tools, including iLastik, CellProfiler, and SVI-Huygens. I developed computer vision pipelines for microscope automation, enhancing efficiency and accuracy in imaging processes.

STATISTICS

Over 20 years of expertise in statistical inference, including parametric and non-parametric methods, as well as advanced bootstrap techniques.

CODING, SCRIPTING, AND VERSION CONTROL

Proficient in coding with:

- **Python**, including Scikit-image, Scikit-learn, Scipy, Pandas, Colaboratory, and basics in TensorFlow
- **Bash** scripting
- **R**, including Bioconductor and EBImage
- **Matlab**, in particular, the Optimization Toolbox and the Image Processing Toolbox
- **Version control** with Git, Repository Management on GitHub and the development of web interfaces with GitHub Pages.

MICROSCOPY IMAGING

Extensive experience in fluorescence microscopy imaging techniques. I excel in designing imaging experiments to quantify information in image outputs and integrate diverse microscopy methodologies.

PROBLEM-SOLVING AND ANALYTICAL SKILLS

With over 20 years of experience solving complex and abstract problems, I've developed the ability to break down intricate information, identify meaningful connections, and approach challenges with a results-driven mindset, consistently leading to effective and innovative solutions.

SOCIAL SKILLS

I gained strong communication skills through specialized scientific communication courses and extensive experience presenting at international meetings. I am a dedicated team player committed to teamwork. I emphasize responsibility, reciprocal trust, and effective communication as crucial for achieving challenging research project objectives.

ORGANISATIONAL SKILLS

Strong project and team management skills and extensive experience designing and conducting complex, long-term scientific experiments with interdisciplinary and international collaborations.

PUBLICATIONS

I published my work in various peer-reviewed journals, including Nature, Cell, eLife, MBoC, and Current Biology, and I contributed to two book chapters for Methods in Cell Biology. A complete publication list can be found here:

https://orcid.org/0000-0003-2548-9183#works

TEACHING

I have taught Matlab and Microscopy practicals at the University of Geneva since 2017. At EMBL, I tutored Quantitative Microscopy practicals for the EMBL internal PhD program and the EMBO course for Cell Biology. I teach physics to secondary school students.

SUPERVISORY ROLES

- Reviewer for Molecular Biology of the Cell (MBoC) journal
- External reviewer for the Bioinformatics for Health Sciences MSc program at the University Pompeu Fabra and the University of Barcelona
- Supervisor of students in internship

SOCIAL ACTIVITIES

- Coach J+S
- Chef de course Randonnée à Ski J+S
- Chef de course au Amis Montagnards de Genève
- Président de la commission Alpinisme et Escalade des Amis Montagnards de Genève
- Responsable des blocs d'escalade de Genève Montagne