

Simone De Camillis

I am a physicist with expertise in imaging technologies and statistical analysis of data, with a keen interest for cartography and geoscience applications. I am now seeking to transition from academia into specialised roles that leverage my skills in analytics and data visualisation.

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Professional Experience

Research Fellow / Optical specialist

Jan 2021 – Present

Australian National University, Dep. of Material Physics (Supervisor: Prof. Adrian Sheppard)



- Undertaking R&D activities to enhance instrument performance and capabilities, aligned with the objectives of our commercial project, Smartlight.
- Conducting statistical analysis of data and targeted 3D data visualisation to evaluate performance.
- Modelled imaging errors caused by opto-mechanical distortions and environmental instabilities. Developed suitable correction algorithms and standard calibration procedures.
- Joining conversations with the commercial partners, providing regular reports or presentations, ensuring alignment and effective communication with all stakeholders.
- Managing the optical laboratories, establishing health and safety guidelines for users, delivering lab inductions, and providing training for the proper use of equipment.

Research Fellow

Jan 2019 – Jan 2021

Macquarie University (Supervisor: Em. Prof. Jim Piper)

ARC Centre of Excellence for Nanoscale BioPhotonics (cnblegacy.org.au/imaging)



- Leading research projects to enhance super-resolution microscopy techniques by leveraging the optical properties of nanomaterials.
- Implementing image processing and numerical analysis to evaluate instrument performance.
- Working collaboratively with material scientists and biologists to develop novel nanoprobes for biomedical applications.
- Writing scientific publications, grant applications, and white papers to support my research.

R&D Engineer

Jan 2017 – Dec 2017

General Electric - Grid Solutions, Lisburn, UK (Supervisor: Dr. Chris Calvert)



- Researched and assessed new electro-optical solutions for gas detection to support and enhance GE products.
- Developing algorithms enhancing detector accuracy, by analysing field data.

Recent Training Courses

Apr- May 2025	ArcGIS Pro (ANU GIS400) delivered by the Australian National University
Mar 2025	Regression in Machine Learning delivered by the Queensland Cyber Infrastructure Foundation (QCIF).
Feb-Apr 2024	Online course on “Design of High-Performance Optical Systems through Zemax” delivered by Coursera (University of Colorado Boulder).

Skills

- Programming**
- Geographic Information Systems: QGIS, ArcGIS Pro.
 - Simulations and data analysis: Python, MATLAB, C, Fortran, ImageJ, Paraview.
 - Editing: Latex, Office.
 - Project management: Jira, Confluence.
 - Drawings: Inkscape, Blender.
- Leadership**
- Management of the SmartLight optical laboratories.
 - Head researcher for projects on microscopy and spectroscopy.
 - Representative of early career researchers within the CNBP Centre of Excellence.
- Communication**
- 15 peer-reviewed papers published in international journals (see ORCID profile).
 - 6 talk/poster presentations at international conferences.
 - Teaching the postgraduate class Advanced Imaging Methods and Systems (PHYS8721, ANU, 2021-2023).

Education

Doctor of Philosophy (Ph.D.) in Optical Physics

Oct 2013 – June 2017, *Queen's University Belfast, UK* (Supervisor: Dr. Jason Greenwood)

Laurea Magistrale (Master of Science) in Plasma and Condensed Matter Physics

Oct 2010 – July 2013, *University of Pisa, Italy* (Supervisor: Prof. Francesco Califano)

Laurea Triennale (Bachelor of Science) in Physics

Oct 2008 – July 2010, *University of Pisa, Italy*

Grants and Awards

- Jan 2020 **Collaborative Seed grant** from Biophotonics Career Workshop at Swinburne University of Technology (AUD 2,500).
- Sep 2015 **Short-term Scientific Mission grant** from European COST Action (~AUD 4,100).
- Jan 2015 **Travel grant** from European COST Action.
- Dec 2013 **Short-term Scientific Mission grant** from European COST Action (~AUD 4,000).

Interests

Cartography and geospatial data

Developing topographic maps for navigation in the ACT Nature Reserves (details on my [website](#)).

Cross-referencing data sets to geospatial information: mature tree loss, bicycle crashes, outdoors fitness stations, rare plant habitats.

ACTSES volunteering

Providing emergency response for storm and water damage impacting the community.

Currently serving as Deputy Training Officer at the Rivers Unit.