Emilie Nogué

+33675639415 | e.nogue@imperial.ac.uk | London, England

RESEARCH INTERESTS

Realistic computer graphics, appearance modeling, polarization, wave optical effects.

EDUCATION

Imperial College London - Realistic Graphics and Imaging Group
London, UK

PhD candidate, Data-Driven Wave-Optical Material Appearance Modeling and Rendering — *Dec 2020 – 2024*

- Researching wave-optical appearance models and effects in materials setup design
- Investigation of novel learning-based approaches for estimating detailed wave-optical parameters of material appearance from sparse observations
- Development of complementary neural-rendering approaches that could be implemented for efficient rendering of complex wave-optical effects for interactive visualization applications.

Institut d'Optique Graduate School
Palaiseau, France

French Engineering Diploma (Master's Degree) — *Sept 2017 – Oct 2020*

- Photonics, Optics and Engineering - 135 hours of Experimental Practice in Optics : linear and non-linear optics, electromagnetism, quantum mechanics and optics, radiometry, photometry, colorimetry, lasers, physics of sensors
- As of 2nd year, specialization in Computing at Institut Optique d'Aquitaine, Bordeaux : image processing, numerical techniques, algorithmics and object-oriented programming, GPU programming, image synthesis, geometry modeling and display technologies
- FIE (2017-2020) – Innovation and Entrepreneurship Track - 500 hours of supplementary work.

CPGE Lycée Joffre
Montpellier, France

Preparatory Classes for « Grandes Ecoles » — *Sept 2014 – June 2017*

- Mathematics, Physics and Engineering Science track
- Intensive three-year curriculum preparing for the competitive entrance examinations to the French 'Grandes Écoles' (highly-selective French educational institutions). One of the highest courseloads in Europe with up to 45 contact hours a week and 10 hours of guided tutorials and oral exam sessions.

Lycée Le Caousou
Toulouse, France

Baccalaureate - European Section English / French — *2014*

- Science Track.

EXPERIENCE

Research Secondment, EPFL
Lausanne, Switzerland

Visiting Researcher — *June 2023 – Sep 2023*

- Bidirectional Texture Function acquisition.

Research Secondment, Charles University
Prague, Czech Republic

Visiting Researcher — *March 2022 – July 2022*

- Exploration of modeling of wave-optical effects such as fluorescence
- Enhancement of spectral measurements.

EARLY STAGE RESEARCHER, PRIME ITN
London, UK

PhD fellow in Predictive Rendering — *Dec 2020 – 2024*

- Marie Sklodowska-Curie H2021-ITN PRIME Research Network, European Commission.

ONERA, the French Aerospace Lab Toulouse, France

Intern *Feb 2020 – July 2020*

- Brainstormed and iterated measurement setups for LiDAR acquisition
- Programmed in C++ for the automatic processing of 3D LiDAR signal on Ubuntu and Mac
- Assisted inplane acquisition of LiDAR signals
- Processed large databases of point clouds from an acquisition campaign
- Coordinated and oversaw ground acquisition of LiDAR signal with real time signal processing

FittingBox Toulouse, France

Intern *May 2019 – Aug 2019*

- Conducted real-time testing of ocular measurements
- Converted Matlab experimental program to C++ architecture for commercialisation purposes
- Designed C++ algorithms for augmented reality
- Carried out market intelligence on competitive technologies
- Project management.

University of Victoria Victoria, BC, Canada

Intern Research Assistant *June 2018 – Aug 2018*

- Experimented use of optical tweezers for molecular analysis relating to the detection and quantification of protein-DNA interactions in the fight against genetic diseases
- Developed a Matlab setup interface for signal processing
- Observed nanoplasmonic effects on DNA
- Operated optical tweezers to align laser and capture DNA.

ENTREPRENEURSHIP

Lumirithmic *2021-now*

Developer and researcher for an Imperial College spin-out company. Lumirithmic is a deep tech startup focuses on graphics/vision/ML.

Asp9ct *2018-2020*

Market research and development of a physics-based software for modeling and rendering of nanostructured surfaces. Conducted in partnership with researchers at LP2N (Bordeaux) and IOA professors: R. Pacanowski, K. Vynck and P. Lalanne.

SecureLight *2017-2018*

First start-up project: development of a laser-based device to improve visibility and security of cyclists under poor lighting conditions.

ACADEMIC ACTIVITIES

Reviewer for SIGGRAPH and SIGGRAPH Asia.

AWARDS AND SCHOLARSHIPS

Selected as one of the participants for Rising Stars 2023, WiGRAPH co-located with SIGGRAPH 2023 and 2024.

Publications

Polarization-imaging Surface Reflectometry using Near-field Display. Nogué, E., Lin, Y., Ghosh, A. (2022). Eurographics Symposium on Rendering.

Affordable Spectral Measurements of Translucent Materials. Iser, T., Rittig, T., Nogué, E., Nindel, T. K., Wilkie, A. (2022). ACM Transactions on Graphics, 41(6). https://doi.org/10.1145/3550454.3555499

Associations and committees

Equality Diversity and Culture Committee Imperial College London, London, UK
PhD Representative *February 2021 — now*

Working on the acquisition of grant for European Researchers Night at Imperial.

Working on the creation of EDI workshops for PhD cohorts outside of Imperial.

Camp Thunderbird, YMCA Victoria, BC, Canada
Program Assistant *June 2013 — August 2013*

Took care of children between the ages of 5 and 11

Developed and running activities such as arts and crafts, kayaking, canoeing, mass games, archery

Helped to supervise overnight backpacking out trips

Other Skills

Computer: Matlab, Python, C/C++, Shell scripting, Mitsuba2, Mitsuba3, pbrt, OpenGL, Git, VS Code, PointCloud Library, Blender, Unity, OpenCV, Excel, LaTeX

Spoken Languages: French(Native), English(Fluent C2), Spanish(C1), Italian(Basic), Czech(Beginner), Ancient Greek (Basic)

Certifications:English language certification: TOEIC, IELTS, Cambridge English: Advanced; PSE1 (French First-Aid Certification)

Interests:Reading,Running, Hiking, Photography, Aerial Circus.