Dr. Peter Fasogbon

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Research Interests: Computer Vision and 3D Geometry; Multi-view Calibration; Industrial 3D Measurement and Metrology; Camera–Laser Systems and Active Vision; Real-Optics Simulation, Lighting, and Distortion Modelling; Real-time Volumetric Systems; Classical and Neural Rendering; XR (AR/MR/VR); Visual AI Systems.

WORK EXPERIENCE

APRIL 2017 – PRESENT
Senior Researcher, Computer Vision
Nokia Technologies, Finland

- Led research and development of real-time volumetric capture and XR communication systems.
- Designed end-to-end multi-camera pipelines including calibration, depth enhancement, and rendering under strict latency constraints.
- Collaborated with Nokia Bell Labs and business units to transition research into standard-compliant, product-ready solutions.
- Contributed to international standards (MPEG, 3GPP, XR5G), patents, publications, and high-visibility executive and public demos.

APRIL 2013 – APRIL 2016
R & D Engineer, Computer Vision Systems
French Railway Company (SNCF)

- Developed industrial-grade 3D vision systems for monitoring high-speed railway catenary and contact wires.
- Designed calibration and reconstruction pipelines for camera- and laser-based inspection systems operating under extreme conditions.
- Performed system testing, validation, and field integration in real operational railway environments.
- Collaborated with academic and industrial partners to transition research prototypes into deployable inspection solutions.

NOVEMBER 2012 – MARCH 2013
Engineer, Computer Vision Simulation
Université de Lille, CRISTAL (CNRS)

- Developed a 3D vision simulation framework for railway inspection applications.
- Modeled camera and laser sensor placement, optical distortions, and environmental perturbations under high-speed railway constraints.
- Implemented simulation components for laser-stripe sensors, stereo vision, refractive distortion, and realistic noise models.

JANUARY 2012 – JUNE 2012
Master Research Intern, Computer Vision
Université d'Auvergne, ALCOV ISIT (CNRS)

- Conducted research on real-time tool and tissue segmentation for minimally invasive surgery.
- Developed monocular 3D reconstruction methods for surgical scenes.
- Implemented GPU-accelerated algorithms using CUDA to meet real-time performance constraints.

MAY 2011 – SEPTEMBER 2011
Summer Research Intern, Computer Vision
Université de Bourgogne, Le2i (CNRS), France

- Developed probabilistic image analysis methods for industrial tube crack detection.
- Designed statistical correlated filters under exponential noise models.
- Project conducted in collaboration with a multinational manufacturing company.

EDUCATION

SEPT. 2013 – OCT. 2016
Doctor of Philosophy (Computer Vision)
Université de Lille, France

- Industrial PhD conducted in collaboration with SNCF (French National Railway Company) and Université de Lille, CRISTAL (CNRS).
- Research focus on 3D vision-based dimensional measurement for industrial inspection systems.
- Dissertation: *Dimensional Measurement of Metallic Objects by 3D Vision* (industrial thesis, confidential for four years).

2010 – 2012
Master of Science - VIBOT
Université de Bourgogne, France

- Erasmus Mundus international master's program in computer vision and robotics.
- Triple-degree program with Heriot-Watt University (UK) and Universitat de Girona (Spain).
- Strong focus on multi-view geometry, robotics, image processing, and 3D reconstruction.

2009 – 2010

Professional Bachelor's Degree
Université Joseph Fourier, IUT1, France

- Major in Computer Networks and Telecommunications.
- Final Project: Computer Network Security (Firewall design and deployment).
- Technical training in database-backed web systems (MySQL).

2007 – 2009

Undergraduate - Electronics Engineering
Obafemi Awolowo University, Nigeria

- Completed two years toward a B.Eng. in Electronics Engineering.
- Memoir: ZigBee wireless networking (submitted to Université Joseph Fourier).

PROJECT EXPERIENCE

Nokia Gaussia (2025 – Present)
- *Principal computer vision researcher on next-generation Gaussian Splatting systems for real-time XR, covering capture, rendering, compression, and streaming under live constraints.*
- *Research spans hybrid splat–mesh representations, dynamic pruning for compression, and metadata signaling for standards-aligned pipelines, in collaboration with Nokia Bell Labs and internal business units.*
- *Key technologies: Gaussian splatting, hybrid rendering, compression, metadata signaling, real-time streaming, XR systems.*

Nokia Volstream (2020 – 2025)
- *Principal computer vision contributor to a real-time volumetric streaming platform for immersive XR communication, spanning multi-view calibration, depth refinement, and classical and neural rendering.*
- *Designed low-latency, scalable pipelines resilient to network variability, with direct contributions leveraging V-PCC and MIV volumetric video compression technologies.*
- *Additional technical contributions to OMAF and HEIF standards, focusing on camera parameter signaling for volumetric capture setups, particularly camera calibration representation.*
- *Outcomes include patents, peer-reviewed publications, open-source components (planned for 2025), and high-visibility public and executive demonstrations across MWC, IBC, and the GStreamer Conference.*

Impact & Public Demonstrations:
Mobile World Congress (MWC): *2023, 2024, 2025 — Live demonstrations of Volstream, including Cloud RAN integration with Nokia network infrastructure.*

Brooklyn 6G Summit: *2025 — Joint demonstration of Volstream with IVAS (Immersive Voice and Audio Services), enabling live spatial audio transmission over 5G networks.*
IBC Amsterdam: *2025 — XR demonstrations using lightweight smart glasses (XREAL Air 2), highlighting the transition from HMD-based VR to wearable XR devices. with support for widely used RGB-D sensors such as Azure Kinect and Orbbec cameras.*
GStreamer Conference: *2024 — End-to-end real-time volumetric streaming demonstrations and integration with GStreamer-based media pipelines.*
Millennium Technology Prize Forum: *2024 — Public demonstration of real-time volumetric communication technologies.*
Nokia Radio World: *2023 — Hosted live demonstrations showcasing volumetric media over Nokia radio and network technologies.*
Executive Demonstrations: *2024 — Private demonstrations to Nokia CEO, executive leadership, and Nokia Technologies leadership teams.*

Nokia MD3C (2019 – 2020)
- *Main researcher and developer of a mobile depth generation system combining smartphone vision and cloud-assisted processing for early XR platform demonstrations.*
- *The work achieved high internal visibility and supported a winning internal pitch that led to the creation of the Nokia RXRM (Real-time eXtended Reality Multimedia) initiative.*
- *Demonstrated to Nokia Technologies leadership and subsequently to the Nokia Technologies President, showcasing mobile depth generation and cloud-assisted XR capabilities.*
- *Additional outcomes included early conceptual contributions to standard-compliant XR players, such as 3D-aware caption overlays within standard OMAF (Omnidirectional Media Format) players.*
- *Key technologies: mobile vision, depth estimation, cloud processing, real-time optimization.*

CAMESCAT (2013 – 2016)
- *Industrial PhD project conducted within the CAMESCAT programme, led by SNCF Ingénierie and supported by regional, national, and European funding (SNCF overview).*
- *Developed advanced vision-based systems for direct, real-time measurement and inspection of high-speed railway catenary wires, enabling scalable industrial deployment and reducing reliance on foreign technologies.*
- *Total project budget of approximately **3.3 million EUR** over **36 months**, with inter-ministry regional funding, partial EU support, and additional contributions from local authorities (Optitec project summary).*
- *Main scientific contributor and technical liaison during my industrial PhD, bridging academic research and industrial deployment across an international consortium.*
- *Technical work covered camera and laser calibration, real-time 3D reconstruction, optical and distortion modeling, non-conventional sensor configurations, and active system placement for high-speed environments.*

Industrial & Academic Collaboration:

- **SNCF Ingénierie** *(Project lead, France)*
- **CSEM — Swiss Center for Electronics and Microtechnology** *(csem.ch) — optics, lighting, and sensor simulation*
- **MERMEC Group** *(mermecgroup.com) — collaboration across France, Australia, Japan, and Canada*
- **Ateliers Laumonier** *(laumonier.fr)*
- **O2GAME** *(o2game.com)*
- **Université de Lille / CRISTAL (CNRS)**

• *Delivered robust prototypes validated in real railway environments, with strong media visibility, patent-oriented outcomes, and foundations for industrial commercialization and technology transfer to metrology and quality control.*

• **Key technologies:** *3D vision, camera and laser calibration, laser–camera systems, real-time processing, optical modeling, industrial inspection.*

OTHER WORK EXPERIENCE

Transcriber at Systrad (2013)
Part-time: Translation tasks for the French National Police in Lille, France (English–French).

AWARDS

2025	**Best Paper Nomination (Top 3)** *27th International Symposium on Multimedia (ISM), Naples, Italy — Paper on multi-camera color calibration for volumetric streaming.*
2020	**Nokia Best Pitch Award** *Winning internal pitch on OneReality that contributed to the launch of Nokia RXRM (Real-time eXtended Reality Multimedia).*
2012	**Merit-Based Grant for PhD Thesis** *Inter-Ministry Fund of Nord-Pas-de-Calais Region, France*
2010	**Merit-Based Grant — CISCO "More Together" Competition** *IPv6 competition, 3rd place nationwide in France*

LANGUAGE

ENGLISH	Fluent / Full Professional Proficiency
FRENCH	Full Professional Proficiency
FINNISH	Intermediate

SKILLS

PROGRAMMING	C/C++, CUDA, Python, MATLAB, Java, Scala
LIBRARIES & FRAMEWORKS	OpenCV, ROS, Ceres, g2o, OpenCL, OpenGL, Blender, Unity
DEEP LEARNING	PyTorch, TensorFlow
3D VISION	SLAM, SfM, multi-view geometry, structured light
OTHER	Visual tracking, real-time processing

HOBBIES

Traveling, football goalkeeping, dancing, and playwriting.

PUBLICATIONS AND PATENTS

Published 15+ peer-reviewed articles in computer vision and engineering, with over 80 citations.

Author or co-author of 5+ publicly available patents, with more than 10 additional patent applications submitted.

Google Scholar profile