

Cristian Rendón



📍 France ✉ crendoc11@gmail.com 🌐 Web Site in Linked In 🔄 crendo11

About Me

Research-driven engineer with a strong foundation in optical systems, simulation, and full-stack prototyping, spanning hardware and software. Proficient in CAD/CAM, system modelling, and algorithm development, with academic credentials in Mechanical Engineering (BSc, MSc) and currently completing a PhD in Computer Science focused on vision-enhancing optical technologies.

Skills

Optics	Optical Design, Computational Optics	Back-end	Node.js, REST API
CAD	Onshape, FreeCAD, Blender	Front-end	Javascript, CSS, HTML, Angular
Coding	Python, Matlab, OpenCV	Languages	English, Spanish, French

Experience

PhD in Computer Science

Augmented Reality & Artificial Intelligence (ARAI) Team [🔗](#), Paris-Saclay University Orsay, FR

Oct 2022 – present

- Development of a novel optical system to enhance human vision, with applications in augmented vision, adaptive optics, and computational optics.
- Expertise in the design of optical systems involving Spatial Light Modulators (SLMs) and free-form optics, with simulations in Code V.
- Hands-on experience in hardware prototyping using 3D printing and mechanical design in Onshape CAD.
- Collaborating with experts in computer graphics, ophthalmology, and optics to build an interdisciplinary solution

PhD Visitor

User Interface Research Group [🔗](#), The University of Tokyo

Tokyo, JP

May 2025 – July 2025

- Collaboration focused on experimental validation and prototyping of Virtual Reality applications of Optical Systems.

Computer Geometry Engineer

Cohesive Manufacturing [🔗](#)

Medellín, CO

Apr 2021 – May 2025

- Led the development of computational geometry technologies using JavaScript, Node.js, and Angular.
- Key contributor to the company's 3D viewer, creating a reusable Angular library for seamless project integration.
- Collaborated with designers and clients to deliver tailored web applications for digital manufacturing.
- Co-authored a research paper on primitive geometry identification, published in MDPI with Universidad EAFIT.

Researcher

CAD CAM CAE Laboratory [🔗](#), EAFIT University

Medellín, CO

July 2017 – Sept 2022

- Conducted research in Computational Geometry, Mechanics, Fluid Dynamics, and Dynamic Systems.
- Worked on projects optimizing wing profiles for maximum lift using CFD simulations and conducted experimental fluid dynamics research on skin friction in turbulent flows.
- Co-developed a technology for identifying primitive geometries in poorly faceted meshes, implemented in industry with Cohesive Manufacturing.
- Used Matlab, JavaScript, Ansys, and LaTeX for simulations and article writing. Teaching Assistant for "Introduction to CAD/CAM."

Researcher

Walter Bassett Aerodynamics Laboratory [🔗](#), The University of Melbourne

Melbourne, AU

Jan 2019 – July 2019

- Assisted in the project "Active Control of Large-scale Structures in High Reynolds Number Turbulent Boundary Layers," post-processing Particle Image Velocimetry (PIV) and hot-wire anemometry data.
- Developed expertise in turbulent boundary layers, PIV, hot-wire and hot-film anemometry, and signal analysis.
- Produced a research article in partnership with CAD/CAM/CAE Laboratory from Universidad EAFIT.

Education

Université Paris-Saclay

Oct 2022 – present

PhD in Computer Science

Universidad EAFIT

Sept 2020 – Sept 2022

MSc in Engineering

Universidad EAFIT

Jan 2015 – July 2020

BSc in Mechanical Engineering

- Minor:** Computational Mechanics

Publications

- Cristian Rendon-Cardona, Marie-Anne Burcklen, Richard Legras, Christian Sandor, Augmented Vision Systems: Paradigms and Applications. *IEEE Transactions on Visualization and Computer Graphics*, XX(XX): 1-18, July 2025. DOI: [10.1109/TVCG.2025.3587527](https://doi.org/10.1109/TVCG.2025.3587527)
- Cristian Rendon-Cardona, Jorge Correa, Diego A. Acosta, Oscar Ruiz-Salguero. Analytic Form Fitting in Poor Triangular Meshes. *Algorithms*, 14(11): 304-331, October 2021. DOI: [10.3390/a14110304](https://doi.org/10.3390/a14110304)
- Cristian Rendon-Cardona, Zhoushun Ruan, Oscar Ruiz-Salguero. Skin-friction Measurements in Turbulent Boundary Layers. *International Journal of Engineering and Technology*, 12(1): 1-15, February 2020. DOI: [10.3390/a14110304](https://doi.org/10.3390/a14110304)
- Cristian C. Rendon, José Hernandez, Oscar Ruiz-Salguero, Carlos A. Alvarez, Mauricio Toro. Wing profile evolution driven by computational fluid dynamics. *UIS Ingenierías*, 18(2): 139-149, January 2019. DOI: [10.18273/revuin.v18n2-2019013](https://doi.org/10.18273/revuin.v18n2-2019013)