



# Paul Berg

paul@ber.gp

ber.gp

GitHub

Scholar

## About

I am a third year PhD student currently looking for an opportunity to solve challenging problems.

I have had experiences ranging from designing and shipping user-facing web products to participating in research projects.

## Education

### Engineering Degree in Computer Science

Université de Technologie de Compiègne (UTC), Compiègne  
Sep. 2016 - Aug. 2021

### Erasmus Semester in Software Engineering

Technische Universität (TU), Graz, Austria  
Feb. 2018 - June. 2018

## Skills

Python	Pytorch, Pandas, Polars, numpy
JuliaLang	Pluto, IRTools, Editor support
JavaScript	React, node, Typescript
Web	HTML, Tailwind
Others	Git, Rust, bash, linux

## Languages

French	Native
English	Fluent, 980/990 TOEIC
German	Basic, A2

## Experiences

### PhD in Representation Learning for Remote Sensing

IRISA, Université de Bretagne Sud, Vannes  
Nov. 2021 - Nov. 2024

Studied the field of representation learning with applications to remote sensing images supervised by Minh-Tan Pham and Nicolas Courty.

Results were published in international conferences and journals.

Teached undergraduate courses in Deep Learning with Nicolas Courty and Olivier Grisel and gave a course about SQL database.

### JuliaLang Open Source Contributor

Since Sept. 2020

Maintained and developed core features to the notebook system Pluto.jl which is being used in institutions such as MIT or Nasa. I also contributed bug fixes and features to core packages of the ecosystem.

I was a mentor during Google Summer of Code 2022, which resulted in the development of a new package which has been successfully adopted in the ecosystem.

### Computer Vision Research Intern

IRISA, Université de Bretagne Sud, Vannes  
Feb. 2021 - Aug. 2024

Joined an ongoing research project and developed a weakly supervised method for marine mammal detection which has since been published.

### Fullstack Developer Intern

Epsor, Paris  
Sep. 2019 - Feb. 2020

Helped during the migration of a legacy nodejs application to a new CQRS-based stack (Kafka) of a fintech startup. I was in the team that developed a workflow system for long running jobs on top of Cadence (Golang).

### Freelance Web Developer

Freelance, Compiègne  
Sep. 2018 - Feb. 2020

Developped a custom solution for an online catalog and bill estimator for a local artisan. Developed new custom features for a Drupal used by >1k members.

## Publications

---

### Multimodal Supervised Contrastive Learning in Remote Sensing Downstream Tasks

Paul Berg, Baki Uzun, Minh-Tan Pham and Nicolas Courty.  
IEEE GRSL, 2024.

### Joint multi-modal Self-Supervised pre-training in Remote Sensing: Application to Methane Source Classification

Paul Berg, Minh-Tan Pham and Nicolas Courty.  
IEEE IGARSS, 2023.

### Automatic part segmentation of facial anatomies using geometric deep learning toward a computer-aided facial rehabilitation

Duc-Phong Nguyen, Paul Berg, Bilel Debbabi, Tan-Nhu Nguyen, Vi-Do Tran, Ho-Quang Nguyen, Stéphanie Dakpé, Tien Dao.  
Engineering Applications of Artificial Intelligence, 2023.

### Spherical Sliced-Wasserstein

Clément Bonet, Paul Berg, Nicolas Courty, François Septier, Lucas Drumetz and Minh-Tan Pham.  
International Conference on Learning Representations, 2023.

### Self-supervised learning for scene classification in remote sensing: Current state of the art and perspectives

Paul Berg, Minh-Tan Pham and Nicolas Courty.  
Remote Sensing, 2023.

### Weakly supervised detection of marine animals in high resolution aerial images

Paul Berg, Deise Santana Maia, Minh-Tan Pham and Sébastien Lefèvre.  
Remote Sensing, 2022.

## Other Research Activities

---

### Reviews

I have reviewed for the following conferences and journals: GRSL, TGRS, BMVC and ECML PKDD.

### Talks

01/12/2023 A macro-view of Reactivity in Pluto.jl, JuliaCon Local, Eindhoven.  
07/07/2023 Department Day, Rennes.  
16/07/2023 IGARSS, Pasadena.  
06/10/2022 Team Seminar, Vannes.  
08/04/2021 Automated Bindings & Metaprogramming, PlutoCon, Online.