

# Emilien Dupont

<https://emiliendupont.github.io>

## EDUCATION

---

- **University of Oxford** Oxford, UK  
*PhD Machine Learning* *Oct 2018 -*
  - Supervised by Yee Whye Teh & Arnaud Doucet
  - Research interests: generative models, neural fields, neural rendering, neural ODEs and flows, neural compression
- **Stanford University** Stanford, CA  
*MS Computational and Mathematical Engineering* *Sept 2014 - Mar 2016*
  - GPA: 4.02
- **Imperial College London** London, UK  
*BSc Theoretical Physics* *Oct 2010 - Jun 2014*
  - Rank: 1/206 students, Grade: 87.2%

## EXPERIENCE

---

- **Google DeepMind** London, UK  
*Research Scientist Intern* *Mar 2021 - July 2021*
  - Research with Danilo Rezende on generative models of neural networks with applications to computer vision
- **Apple** Oxford, UK  
*Part Time Research Intern* *Nov 2019 - June 2020*
  - Part time research on neural rendering during PhD with collaborators at Apple
- **Apple** Seattle, WA  
*Research Intern* *June 2019 - Aug 2019*
  - Research with Qi Shan on equivariant neural rendering
- **Schlumberger STIC** Menlo Park, CA  
*Machine Learning Scientist* *June 2016 - July 2018*
  - Created, implemented and deployed machine learning algorithms to solve problems in time series, vision and geology, improving state of the art for several tasks
  - Research on deep generative models with a focus on learning interpretable representations
- **Gurobi Optimization** Palo Alto, CA  
*Software Engineering Intern* *June 2015 - Aug 2015*
  - Researched, formulated and solved integer optimization models for a wide area of industry applications including energy, telecom and medicine
- **DTU Compute** Lyngby, Denmark  
*Research Intern* *June 2013 - Sep 2013*
  - Research with Allan Engsig-Karup on sparse dynamics for PDEs

## PUBLICATIONS

---

- [1] **E. Dupont\***, H. Loya\*, M. Alizadeh, A. Golinski, Y. W. Teh, A. Doucet, COIN++: Neural Compression Across Modalities
- [2] **E. Dupont\***, H. Kim\*, A. Eslami, D. Rezende, D. Rosenbaum, From data to functa: Your data point is a function and you can treat it like one, *ICML 2022*
- [3] **E. Dupont\***, A. Golinski\*, M. Alizadeh, Y. W. Teh, A. Doucet, COIN: COmpression with Implicit Neural representations, *ICLR 2021 Neural Compression Workshop **Spotlight***
- [4] **E. Dupont**, Y. W. Teh, A. Doucet, Generative Models as Distributions of Functions, *AISTATS 2022 **Oral***

- [5] *M. Hutchinson\**, *C. Le Lan\**, *S. Zaidi\**, **E. Dupont**, *Y. W. Teh*, *H. Kim*, LieTransformer: Equivariant self-attention for Lie Groups, *ICML 2021*
- [6] **E. Dupont**, *M. A. Bautista*, *A. Colburn*, *A. Sankar*, *C. Guestrin*, *J. Susskind*, *Q. Shan*, Equivariant Neural Rendering, *ICML 2020*
- [7] **E. Dupont**, *A. Doucet*, *Y. W. Teh*, Augmented Neural ODEs, *NeurIPS 2019*
- [8] **E. Dupont**, *S. Suresha*, Probabilistic Semantic Inpainting with Pixel Constrained CNNs, *AISTATS 2019*
- [9] **E. Dupont**, Learning Disentangled Joint Continuous and Discrete Representations, *NeurIPS 2018*
- [10] **E. Dupont**, *T. Zhang*, *P. Tilke*, *L. Liang*, *W. Bailey*, Generating Realistic Geology Conditioned on Physical Measurements with GANs, *ICML 2018 TADGM Workshop*

## AWARDS

---

- Google DeepMind Scholarship 2018  
*PhD funding, 150,000 USD*
- Schlumberger Out of the Ordinary Award 2018  
*Award for extraordinary technical achievements*
- Digital Forum Innovation Award 2017  
*Schlumberger award for most innovative project among 300+ submissions*
- Schlumberger AI Leader 2016  
*Elected as leader of the 1000+ AI community within Schlumberger*
- Governor's Prize 2014  
*Ranked 1st of 206 students in Physics at Imperial College London*

## TEACHING

---

- Teaching Assistant, SB2.1, Statistical Inference Oxford, 2020
- Teaching Assistant, SB2.2, Statistical Machine Learning Oxford, 2019
- Teaching Assistant, CME 102, Ordinary Differential Equations Stanford, 2016

## SKILLS

---

- Programming
  - *Experienced*: Python
  - *Familiar*: C++, Matlab, JavaScript, Scala (Spark)
- Frameworks
  - *Deep Learning*: Pytorch, Jax, Haiku, Keras
  - *Visualization*: d3, plotly
- Languages
  - *Fluent*: Danish, English, French
  - *Intermediate*: German

## PROJECTS

---

- **Visualizations**  
Created d3 based **interactive visualizations** of mathematical concepts, data and generative art
- **Open source paper implementations**  
Open sourced code for several deep learning papers with ★1000+ on **Github**

## ACADEMIC SERVICES

---

- Reviewer: AISTATS 2022, ICLR 2022, ICLR 2021 (*Outstanding reviewer award*), NeurIPS 2020 (*Outstanding reviewer award*), ICML 2020 (*Top reviewer award*), NeurIPS 2019 (*Top reviewer award*)

## INVITED TALKS

---

- The Curse of Discretization and Learning Distributions of Functions 2021  
*ML Collective*
- Representational Limitations of Invertible Models 2020  
*ICML 2020, INN+ Workshop*
- Combining Physics and Machine Learning with Neural ODEs 2019  
*Abingdon, UK*
- Deep Learning for Prognostics and Health Management Tutorial 2017  
*Prognostics and Health Management Conference, Tampa Bay, FL*
- Deep Learning Applications Panel 2017  
*Prognostics and Health Management Conference, Tampa Bay, FL*

## LINKS

---

- [emiliendupont.github.io](https://emiliendupont.github.io)
- [github.com/EmilienDupont](https://github.com/EmilienDupont)
- [observablehq.com/@emiliendupont](https://observablehq.com/@emiliendupont)
- [twitter.com/emidup](https://twitter.com/emidup)
- [linkedin.com/in/emiliendupont](https://linkedin.com/in/emiliendupont)
- [scholar.google.com/citations?user=IY5WyIEAAAAJ](https://scholar.google.com/citations?user=IY5WyIEAAAAJ)