STÉPHANE D'ASCOLI

Ph.D. student

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EXPERIENCE

Ph.D. student & Teacher Assistant

École Normale Supérieure (ENS) & Facebook AI Research (FAIR)

📅 Sep 2018 – Present   📍 Paris

My research focuses on understanding and improving neural networks, from toy models to realistic architectures ⧉. Teacher assistant for graduate courses at ENS.

AI research intern

Snips.ai

📅 Feb 2020 – Aug 2020   📍 Paris

Developed an AI software to generate text for data-privacy concerned speakers ⧉.

Visiting scholar

Center for Computational Relativity and Gravitation

📅 Feb 2017 – Aug 2017   📍 Rochester, NY

Produced the first simulation of the image of a binary black hole in collaboration with NASA. News feature ⧉ in many newspapers (*Daily Mail, L'Obs, Science & Vie...*).

INTERESTS

Science outreach

Wrote three science books ⧉ (two on artificial intelligence and one on astrophysics), all published by First Editions. Spoke on French TV and radio ⧉ ⧉.

Music

Obtained a final Conservatoire diploma in clarinet, and earned several prizes in international clarinet competitions. Performed in solo, chamber music and orchestra concerts. See my YouTube channel for some videos ⧉. Managed an orchestra ⧉ for a year.

EDUCATION

M.Sc. in Theoretical Physics

École Normale Supérieure, Paris

📅 Sep 2016 – Sep 2018

First class honours.

B.Sc. in Physics

École Normale Supérieure, Paris

📅 Sep 2015 – Sep 2016

First class honours.

"Classe préparatiore"

Lycée Thiers, Marseille

📅 Sep 2013 – Sep 2015

Entered ENS Paris (ranked 6th nationwide). Prior to this, obtained a scientific baccalaureate (average grade of 19.63/20).

SKILLS

Music: Clarinet | Piano | Trumpet

Sports: Running | Cycling | Swimming | Tennis | Squash | Skiing | Hiking

Other: Programming | Driving license

LANGUAGES

English   ●●●●●

French   ●●●●●

German   ●●●○○

Spanish   ●●○○○

PUBLICATIONS

📕 Books

- **d'Ascoli, Stéphane**, & Touati, A. (2021). *Voyage au coeur de l'espace-temps*. **First**.
- **d'Ascoli, Stéphane**. (2020a). *Comprendre la révolution de l'intelligence artificielle*. **First**.
- **d'Ascoli, Stéphane**. (2020b). *L'intelligence artificielle en 5 minutes par jour*. **First**.

📑 Journal Articles

- Geiger, M., Jacot, A., Spigler, S., Gabriel, F., Sagun, L., **d'Ascoli, Stéphane**, … Wyart, M. (2020). Scaling description of generalization with number of parameters in deep learning. *Journal of Statistical Mechanics: Theory and Experiment*.
- Geiger, M., Spigler, S., **d'Ascoli, Stéphane**, Sagun, L., Baity-Jesi, M., Biroli, G., & Wyart, M. (2019). Jamming transition as a paradigm to understand the loss landscape of deep neural networks. *Physical Review E*.
- Spigler, S., Geiger, M., **d'Ascoli, Stéphane**, Sagun, L., Biroli, G., & Wyart, M. (2019). A jamming transition from under-to over-parametrization affects generalization in deep learning. *Journal of Physics A: Mathematical and Theoretical*.
- **d'Ascoli, Stéphane**, Noble, S. C., Bowen, D. B., Campanelli, M., Krolik, J. H., & Mewes, V. (2018). Electromagnetic emission from supermassive binary black holes approaching merger. *The Astrophysical Journal*.

👥 Conference Proceedings

- **d'Ascoli, Stéphane**, Touvron, H., Leavitt, M., Morcos, A., Biroli, G., & Sagun, L. (2021). Convit: Improving vision transformers with soft convolutional inductive biases. In *ICML*.
- **d'Ascoli, Stéphane**, Coucke, A., Caltagirone, F., Caulier, A., & Lelarge, M. (2020). Conditioned text generation with transfer for closed-domain dialogue systems. In *SLSP*.
- **d'Ascoli, Stéphane**, Refinetti, M., Biroli, G., & Krzakala, F. (2020). Double trouble in double descent: Bias and variance (s) in the lazy regime. In *ICML*.
- **d'Ascoli, Stéphane**, Refinetti, M., Ohana, R., & Goldt, S. (2020). The dynamics of learning with feedback alignment. In *ICML*.
- **d'Ascoli, Stéphane**, Sagun, L., & Biroli, G. (2020). Triple descent and the two kinds of overfitting: Where and why do they appear? In *NeurIPS (Spotlight)*.
- **d'Ascoli, Stéphane**, Sagun, L., Biroli, G., & Bruna, J. (2019). Finding the needle in the haystack with convolutions: On the benefits of architectural bias. In *NeurIPS*.

🐾 Preprints

- d'Ascoli, S., Sagun, L., Biroli, G., & Morcos, A. (2021). Transformed cnns: Recasting pre-trained convolutional layers with self-attention.
- **d'Ascoli, Stéphane**, Gabrié, M., Sagun, L., & Biroli, G. (2021). More data or more parameters? investigating the effect of data structure on generalization.