LIONEL PIGOU

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EXPERIENCE OVERVIEW

Machine Learning:

- 4 years Ph.D. student: deep neural networks for video and language processing (computer vision + NLP).
- 1 year master's thesis: deep neural networks for video processing.
- Skills: PyTorch, Tensorflow, OpenCV, NumPy, Linux, git, Scikit-Learn, Python, scientific writing.

Software Engineering:

- 5 years game development: graphics engineering, multiplayer, GPU compute, multithreaded job system.
- Internship full stack web application development.
- Computer science master's degree at Ghent University.
- Skills: C#, Unity, Blender, (Compute) Shaders, JavaScript, C/C++, Java, Ruby on Rails.

PROFESSIONAL SUMMARY

Indie Game Developer

Sept 2018 - Present

Nel Stuff — Ghent, Belgium

Solo developing PC video games using Unity and publishing on Steam.

- Mad Adventures (2021 - 2022): a **multiplayer** party game with network-synchronized objects.
  - 177K unique players, 560 daily players**,** the **reviews are 93% positive** as of writing.
- Meor (2018 - 2021): an experimental procedurally generated voxel sandbox game on GPU.
  - A novel approach: the game's code runs mostly on the graphics card instead of the CPU.
  - The engine can draw an area representing **400 million dynamic voxels** on screen all at once.
  - The **multithreaded** job system and the **GPU compute** kernels make the game run smoothly.
  - The game has **30K unique players** and 12K players have put the game on their wishlist.

Ph.D. in Deep Learning

Sept 2014 - Aug 2018

Ghent University — Ghent, Belgium

Deep learning research applied to video data: gesture and sign language recognition.

- **Awarded $100K for winning** an international Kaggle competition on classifying plankton images.
- State-of-the-art gesture recognition results: **90.6% label accuracy** using recurrent neural networks to capture the temporal structure in video. One of the two corresponding articles was **cited 468 times**.
- Achieved a **75.7% top-3 accuracy** (the model can guess up to 3 times) recognizing isolated signs in sign language video corpora using 3D residual neural networks and bidirectional LSTMs.
- Gathered 575 hours of news footage with sign language interpreter overlays in collaboration with VRT. Built a **language model** that encodes fragments of this footage to a Word2Vec embedding.
- Coached ~10 master thesis students on various machine learning and deep learning topics.
- Responsible for the lab's computer servers and GPU cluster, including hardware assembly and software setup.
- Published 2 papers in scientific journals and participated in 4 international conferences.

Full Stack Software Engineering Internship

Summer 2013

Solvace — Ghent, Belgium

- Developed the main analytics page for the application.
- Test Driven Development (TDD), Ruby on Rails, JavaScript.

EDUCATION

Ph.D. in Computer Science: Deep Learning (see above)

2014-2018

Ghent University

Master of Science in Computer Science Engineering: ICT

2012-2014

Ghent University

Master's thesis on deep learning. Won **5th place** in an international competition and was **cited 378 times**.