Liam Schoneveld

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EDUCATION

Master of Science (Artificial Intelligence) *Cum Laude*   2015-2017
The University of Amsterdam
IRP: Semi-Supervised Learning with Generative Adversarial Networks (2017)

Bachelor of Commerce (Liberal Studies)   2009-2013
The University of Sydney
Majors in Economics and Econometrics

PROFESSIONAL EXPERIENCE

Principal AI Researcher, **Powder** ($14.5m 2021 Series A)   Oct 2019-Present

Lead Powder's AI team; help define and implement the AI strategy:

- Designed and developed model training and deployment pipelines for three key product features: detecting which videogame is being played, detecting highlights or exciting moments in the gameplay footage, and verifying the absence of adult content. These models run in real-time, and on-device.
- Co-manage the day-to-day workflow of Powder's seven-person AI team; ensure effective intra- and cross-team communication.
- Research collaboration with Dr. Alice Othmani at Université Paris-Est Créteil (UPEC); first author on two published papers (see Publications), both achieving state-of-the-art results on popular emotion recognition benchmark datasets.
- Research into self-supervised learning for highlights detection led to an order of magnitude reduction in the amount of labels required for training models.
- Technical topics include: deep learning for object detection, classification, video highlighting, facial expression recognition, MLops, deployment to edge devices, model quantisation and pruning, self-supervised learning, etc.

Data Scientist (Deep Learning), **Pandascore** ($6m 2020 Series A)   2017-2019

- Developing and deploying computer vision models for real-time events and stats detection in e-sports tournaments.
- Training and deploying machine learning models using these computer vision-derived data to predict match outcomes in real time.
- Key projects:
  - Detecting hero positions on the League of Legends minimap in real time (plus auto-retraining and deployment when new heroes are released).
  - Probabilistic inference to calculate and optimize betting odds in real time over all possible outcomes in an ongoing Overwatch match.
  - Using GANs to synthetically generate training data of new playable characters in Overwatch before any 'real' training data was available.
- Contributing to growth, product strategy and recruitment efforts.

Machine Learning Specialist, **Scyfer (acquired by Qualcomm)**   Feb-Sep 2017

Completed my Artificial Intelligence (AI) masters' thesis under the supervision of Taco Cohen and Max Welling while interning at Scyfer, an AI consultancy acquired by Qualcomm in late 2017. Focus was on researching and developing semi-supervised deep learning techniques, with an emphasis on computer vision.

Econometrics Contractor, **LEK Consulting**   2016-2017

Contracted to develop econometric revenue analysis and forecasting models for several assets belonging to a large (ASX top 50) Australian client of LEK.

Economics Consultant, **PricewaterhouseCoopers Australia**   2013-2016

Consulted with clients primarily from the transport industry. Focus was on econometric and economic modelling (e.g. demand forecasting, cost-benefit analyses, project appraisal, etc.) and associated analysis and reporting.

Software Developer, **Law in Order Pty Ltd**   2010-2013

Produced electronic databases of legal evidence for Law in Order's clients. Proposed, developed and maintained a quality assurance software tool that continued to be used at Law in Order many years after my departure.

PUBLICATIONS   Schoneveld, L. & Othmani A. (2021). *Towards a General Deep Feature Extractor for Facial Expression Recognition.* 28th IEEE International Conference on Image Processing (ICIP), 2021, pp. 2339-2342.

Schoneveld, L., Othmani, A., & Abdelkawy, H. (2021). *Leveraging Recent Advances in Deep Learning for Audio-Visual Emotion Recognition.* Pattern Recognition Letters, 146, pp. 1-7.

PROGRAMMING LANGUAGES
- Python data science / ML stack (numpy, sklearn, pandas, matplotlib, etc.)
- Deep learning libraries (Pytorch, Tensorflow, Keras, Theano)
- MLops, ML pipeline reproducability, ML model deployment to multiple frameworks (Apple CoreML, TensorRT, tflite, MLFlow, DVC, Docker, Comet.ml)
- Cloud providers: experience with GCP, AWS, Azure, Paperspace
- Unix/Linux, SQL, Git, R, Matlab, C++, Java, HTML, CSS, JavaScript, Julia.

OTHER ACHIEVEMENTS
- Ongoing: Maintain a blog with posts on machine learning at **nlml.github.io**
- Ongoing: Contribute to open source projects on GitHub - e.g. Pytorch, mlflow
- 2018: Presented at Meetup Computer Vision Paris, presentation titled: *Tracking Player Positions on the League of Legends Minimap*
- 2018: Participated in the 2018 Amsterdam Dance Event Hackathon (worked in a team to build a deep learning-based reverse image search application)
- 2016: Placed 1st out of 50 student groups in a Kaggle-style machine learning competition as part of the UvA/VU course *Data Mining Techniques*
- 2015: Placed 17th out of 985 participants in Kaggle's *Facebook Recruiting IV: Human or Robot?* data science competition
- 2013: Placed 2nd out of 108 students in the *Operations Management* course at the University of Sydney
- 2010: Awarded two separate International Exchange Scholarships by the University of Sydney, based on academic merit
- 2008: Placed 7th of 2730 students in Australian Higher School Certificate course *Software Design and Development*.

Hobbies include music (listening and playing keyboard/drums), surfing, climbing, cycling, and traveling.