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Reiichiro Nakano

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Employment

Software Engineer — **Infostellar** — **December 2017 – Present**

- Lead author and maintainer of Starcoder, a gRPC server for dynamically starting, stopping and communicating with GNU Radio flowgraphs. Starcoder is used in production to demodulate and decode satellite communications in real-time. https://github.com/infostellarinc/starcoder. I gave a presentation on Starcoder at the 2018 GNU Radio conference in Henderson, Nevada. https://www.youtube.com/watch?v=lwHgrNaMcZg
- Wrote software to integrate our system with multiple radios and devices from different manufacturers.

Data Scientist — **Adatos** — **October 2016 – November 2017**

- Designed and wrote the backend software for Adatos' core cloud products, developing automated machine learning techniques for credit scoring in the process.

Open source software and personal projects

- **Arbitrary style transfer in the browser**. Ported Arbitrary Style Transfer to the browser using model distillation. Invited to write a post about the project in Google Magenta's blog and contributed back the code to the Magenta repository. https://magenta.tensorflow.org/blog/2018/12/20/style-transfer-js/ https://github.com/reiinakano/arbitrary-image-stylization-tfjs
- **Scikit-plot** (2017). Creator of a library for common data science plots and visualizations. 1.4k+ GitHub stars, 15k+ monthly PyPi downloads. https://github.com/reiinakano/scikit-plot
- **Xcessiv** (2017). Creator of a web-based tool for automated hyperparameter search and stacked ensembling. Mentioned by Kaggle on Twitter and LinkedIn. 1.1k+ GitHub stars. https://github.com/reiinakano/xcessiv
- **Fast style transfer in the browser**. Built the first deeplearn.js (now TensorFlow.js) demo of Fast Neural Style Transfer. 1.2k+ GitHub stars. Has been ported to the ml5.js library. https://github.com/reiinakano/fast-style-transfer-deeplearnjs
- **GAN Playground**. Built a demo allowing training of GANs on toy datasets in the browser. 200+ GitHub stars. https://github.com/reiinakano/gan-playground
- **Notable contributions to major open-source projects**. *TensorFlow.js*: Implemented various CPU and GPU operations; *ml5.js*: Implemented SketchRNN; *magenta and magenta.js*: Added distillation code and Javascript model for arbitrary image stylization. *scikit-learn*: Fixed software regression in v0.19 release.

Research

- **Neural Style Transfer with Adversarially Robust Classifiers**. Under review. https://reiinakano.com/2019/06/21/robust-neural-style-transfer.html
- **Neural Painters: A learned differentiable constraint for generating brushstroke paintings**. Under review. https://arxiv.org/abs/1904.08410

Education

Philippines — **De La Salle University-Manila** — **2011 – October 2016**

- M.Sc. in Electronics and Communications Engineering, October 2016. GPA: 3.6000
- B.Sc. in Electronics and Communications Engineering, October 2016.
- Graduate Thesis: *Utilization of the Physicomimetics Framework for Achieving Local, Decentralized, and Emergent Behavior in a Swarm of Quadrotor Unmanned Aerial Vehicles*
  - Published Journal: https://www.fujipress.jp/jaciii/jc/jacii002100020189/

Additional Experience and Awards

- **Philippine government scholarship recipient:** Recipient of DOST-ERDT scholarship for Master's students. Full scholarship with monthly stipend.
- **University scholarship recipient:** Recipient of Bro. Andrew Gonzalez Academic Scholarship for undergraduate students. Full scholarship.