Tan Minh Nguyen

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UCLA Department of Mathematics, 520 Portola Plaza, Los Angeles, CA 90095

RESEARCH INTERESTS

Deep learning, probabilistic models, optimization, structural learning; structural biology, pandemic research

EDUCATION

Rice University, Houston
Ph.D., Electrical and Computer Engineering, 2020
Committee: Richard G. Baraniuk (chair), Stan J. Osher, Anima Anandkumar, Maarten de Hoop, Santiago Segarra

M.S., Electrical and Computer Engineering, 2018
Committee: Richard G. Baraniuk (chair), Maarten de Hoop, Ashok Veeraraghavan, Ankit Patel

Rice University, Houston
B.S., Electrical and Computer Engineering, 2014, *cum laude*

HONORS AND AWARDS

2020 – 2022	Computing Innovation Postdoctoral Fellowship (CIFellows)
2016 – 2020	NSF Graduate Research Fellowship
2016	Ford Foundation Fellowship Honorable Mention
2015 – 2017	Neuroengineering IGERT: From Cells to Systems Fellowship
2014 – 2016	Texas Instruments Fellowship
2014 – 2016	Ken Kennedy Institute for Information Technology Oil & Gas HPC Workshop Fellowship
2013 – 2014	Louis J. Walsh Scholarship in Engineering
2011	Gold Scholar on Coca-Cola's Community College Academic Team

EXPERIENCE

Department of Mathematics, UCLA — September, 2020 – Present
Postdoctoral Scholar — Los Angeles, CA

DSP Group, Rice University — August, 2014 – August, 2020
Graduate Student Researcher — Houston, TX

NVIDIA AI Research — January, 2019 – August, 2020
Research Intern — Santa Clara, CA

AWS AI — June, 2017 – March, 2018
Research Intern — Palo Alto, CA

GE Oil & Gas — June, 2013 – August, 2013
Engineering Intern — Houston, TX

Department of Electrical and Computer Engineering, University of Houston — June, 2012 – August, 2012
REU Research Intern — Houston, TX

SELECTED INVITED TALKS

Scheduled Restart Momentum for Accelerated Stochastic Gradient Descent
Machine Learning Lunch, Rice University — February, 2020

Neural Rendering Model: Rethinking Neural Networks from the Joint Generation and Prediction Perspective
NeurIPS Workshop on Integration of Deep Learning Theories, Montreal — December, 2018
DeepMath Conference, New York City — November, 2019

TEACHING

Rice University, Houston
Teaching Assistant, Electrical & Computer Engineering Department

- ELEC 677: Introduction to Deep Learning; ELEC 631: Deep Learning

Course Assistant, Electrical and Computer Engineering Department, Computational and Applied Mathematics Department

- ELEC 242: Fundamentals of Electrical Engineering II; CAAM 210: Introduction to Computational Engineering

California Institute of Technology, Pasadena
Project Mentor, Department of Computing and Mathematical Sciences

- CMS 165: Foundation of Machine Learning and Statistical Inference

SERVICE & OUTREACH

ICLR Workshop on the Integration of Deep Neural Models and Differential Equations
Organizer April, 2020

NeurIPS Workshop on the Integration of Deep Learning Theories
Assisted in organizing the workshop December, 2018

Summer Undergraduate Research Fellowship Program at Caltech
Project Mentor June, 2019 – August, 2019

Deep Learning Meetings at Rice University
Organizer

MENTORING

PhD	Yujia Huang (CS, Caltech), 2019 – Present
Master	Wanjia Liu (CS, Rice), 2015 – 2017, Next: Google
Undergraduate	Ethan Perez (CS, Rice), 2016 – 2017, Next: Ph.D. (NYU)
	Si Hui Dai (CMS, Caltech), 2019 – 2020, Next: Ph.D. (Princeton)

SELECTED PUBLICATIONS

T. Nguyen, R. G. Baraniuk, A. L Bertozzi, S. J. Osher, and B. Wang. *MomentumRNN: Integrating Momentum into Recurrent Neural Networks.* arXiv preprint arXiv:2006.06919, 2020. (Accepted at NeurIPS 2020)

B. Wang (co-first author), T. Nguyen (co-first author), A. L Bertozzi, R. G. Baraniuk, and S. J. Osher. *Scheduled Restart Momentum for Accelerated Stochastic Gradient Descent*. arXiv preprint arXiv:2002.10583, 2020.

Y. Huang, J. Gornet, S. Dai, Z. Yu, T. Nguyen, D. Y. Tsao, A. Anandkumar. *Neural Networks with Recurrent Generative Feedback.* arXiv preprint arXiv: 2007.09200, 2020. (Accepted at NeurIPS 2020)

T. Nguyen, A. Garg, R. G. Baraniuk, A. Anandkumar. *InfoCNF: An Efficient Conditional Continuous Normalizing Flow with Adaptive Solvers*. arXiv preprint arXiv:1912.03978, 2019.

Y. Huang, S. Dai, T. Nguyen, P. Bao, D. Tsao, R. G. Baraniuk, A. Anandkumar. *Brain-inspired Robust Vision Using Convolutional Neural Networks with Feedback.* NeurIPS NeuroAI Workshop, 2019.

T. Nguyen, N. Ho, A. B. Patel, A. Anandkumar, M. I. Jordan, R. G. Baraniuk. *A Bayesian Perspective of Convolutional Neural Networks through a Deconvolutional Generative Model*. arXiv preprint arXiv:1811.02657, 2019.

N. Ho (co-first author), T. Nguyen (co-first author), A. B. Patel, A. Anandkumar, M. I. Jordan, R. G. Baraniuk. *Neural Rendering Model: Joint Generation and Prediction for Semi-Supervised Learning*. DeepMath, 2019.

T. Nguyen**,** W. Liu, F. Sinz, R. G. Baraniuk, A. A. Tolias, X. Pitkow, A. B. Patel. *Towards a Cortically Inspired Deep Learning Model: Semi-Supervised Learning, Divisive Normalization, and Synaptic Pruning*. CCN, 2017.

T. Nguyen, W. Liu, E. Perez, R. G. Baraniuk, and A. B. Patel. *Semi-supervised Learning with the Deep Rendering Mixture Model*. arXiv preprint arXiv:1612.01942, 2016.

A. B. Patel, T. Nguyen, and R. G. Baraniuk. A *Probabilistic Framework for Deep Learning*. NIPS, 2016.