Eric Nguyen

etnguyen@stanford.edu | Palo Alto, CA

www.erictnguyen.com | www.github.com/exnx

Deep learning PhD student, focusing on long context LLMs for vision, language and biology

Education

- **Stanford University** | Ph.D. Bioengineering | advisor: Chris Ré — Fall 2020 to present
- **Cornell University** | M.Eng. Computer Science — 2019
- **Stanford University** | M.S. Civil Engineering — 2009
- **University of California, Berkeley** | B.S. Civil Engineering — 2007

Publications & Patents

Jarome Ku*, **Eric Nguyen***, David Romero*, Greg Brockman, [11 others], Michael Poli, Systems and Algorithms for Convolutional Multi-hybrid Language Models at Scale (preprint), 2025.

Garyk Brixi, Matt Durrant, Jarome Ku, Michael Poli, Greg Brockman, [20 others], **Eric Nguyen**, Brian Hie, Genome Modeling and Design Across All Domains of Life with Evo 2 (in submission to Nature), 2025.

Eric Nguyen*, Michael Poli*, Matt Durrant*, [10 others], Chris Ré, Patrick Hsu, Brian Hie, Sequence Modeling and Design from Molecular to Genome Scale with Evo (Science cover), 2024.

Aditi Merchant, Samuel King, **Eric Nguyen**, Brian Hie, Semantic Mining of Functional De Novo Genes from a Genomic Language Model (in submission to Nature), 2024.

Michael Poli*, Armin Thomas*, **Eric Nguyen***, [6 others], Chris Ré, Ce Zhang, Stefano Massaroli, Mechanistic Design and Scaling of Hybrid Architectures (ICML), 2024.

Dan Fu*, Hermann Kumbong*, **Eric Nguyen**, Chris Ré, FlashFFTConv: Efficient Convolutions for Long Sequences with Tensor Cores (ICLR), 2024.

Eric Nguyen*, Michael Poli*, Marjan Faizi*, [7 others], Yoshua Bengio, Stephen Baccus, Chris Ré, HyenaDNA: Long-Range Genomic Sequence Modeling at Single Nucleotide Resolution (NeurIPS spotlight), 2023.

Michael Poli*, Stefano Massaroli*, **Eric Nguyen***, Dan Fu, Tri Dao, Stephen Baccus, Yoshua Bengio, Stefano Ermon, Chris Ré, Hyena Hierarchy: Towards Convolutional Language Models (ICML oral presentation), 2023.

Dan Fu*, Elliot Epstein*, **Eric Nguyen**, Michael Zhang, Tri Dao, Atri Rudra, Chris Re, Simple Hardware-Efficient Long Convolutions for Sequence Modeling (ICML), 2023.

Eric Nguyen*, Karan Goel*, Albert Gu*, Gordon Downs, Preey Shah, Tri Dao, Stephen Baccus, Chris Ré, S4ND: Modeling Images and Videos as Multidimensional Signals with State Spaces, (NeurIPS**)**, 2022.

Eric Nguyen*, Tu Bui*, Viswanathan Swaminathan, John Collomosse, OSCAR-Net: Object-centric Scene Graph Attention for Image Attribution, Intl. Conference on Computer Vision (ICCV), 2021.

Patent in filing (P10134-US): Robust Content Fingerprinting for Image Attribution. (a digital fingerprinting technology using deep learning to authenticate original and tampered images for finding fake news)

Experience

Research Intern Jun 2022 to Sep 2022
Google Research | Image Understanding Team Mountain View, CA

Multimodal image generation

- Scaling the MaskGIT model, a 2-stage model for generating high-res images conditioned on text or images
- Scaled training for 300M images (from 1M), improving FID (quality metric) by nearly 2x
- Implemented a new multi-token "prompt" for embedding conditioning, developed 8 other (failed) techniques

Research Intern Jun 2021 to Nov 2021
Google Research | AI4Design Team Mountain View, CA

Multimodal generative models using video and audio

- Implemented a modal-agnostic Transformer model to create video+audio samples simultaneously
- Achieved competitive results using Vector Quantization for images, vastly improving image quality
- Collaborated with DeepMind, exploring vision, text and audio learned representations and generation

Deep Learning Research Intern May 2020 to Nov 2020
Adobe Research San Jose, CA

Invented content fingerprinting technology (patent in filing) to track image tampering history for journalists

- Detecting authentic/tampered images using deep learning, state-of-the-art paper accepted to ICCV 2021
- Used graph neural networks to model discrepancies in object appearance & spatial relations in images

Computer Vision Researcher Jun 2019 to Apr 2020
Facebook AI New York, NY

Fake news and fake ID detection using deep learning and image forensics

- Trained image tampering classifier using self-supervision to learn generalizable artifact features
- Created novel pipeline to detect fake IDs by measuring font style similarity, fine-grained anomaly detection

Computer Vision Engineer Intern Jun 2018 to Aug 2018
TVision New York, NY

A startup using computer vision to measure how engaged people are watching TV in their homes

- Built deep learning system using face detection and head pose estimation using TensorFlow, OpenCV

Energy Consultant, Manager | Power Advocate (SF, CA) May 2010 to Nov 2013

- Strategic sourcing consultant for power utilities, planning supply chain for power plants construction

Energy Analyst | Aspen Environmental Group (Sacramento, CA) Aug 2009 to May 2010

- Energy economics & policy analysis for regulatory agencies, energy portfolio modeling, GHG accounting

Lab Engineer | Calera Corporation (Los, Gatos, CA) Jun 2008 to Feb 2009

- Cleantech startup capturing carbon from power plants to create carbon-negative cement

Code

Evo: https://github.com/evo-design/evo
Savanna: https://github.com/Zymrael/savanna
HyenaDNA: https://github.com/HazyResearch/hyena-dna
S4ND: https://github.com/state-spaces/s4/tree/main/models/s4nd