NATANIEL RUIZ

natanielruiz@google.com | natanielruiz.github.io | github.com/natanielruiz

POSITIONS AND EDUCATION

Senior Research Scientist, Google DeepMind Cambridge, MA 2025-Present

- Part of the **DeepMind GenMedia** team, working on **pre-training multimodal models** and **new capabilities**.
- We trained **Gemini Omni**, an any-to-any modality multimodal model, released at Google I/O

Research Scientist, Google Research, Cambridge, MA 2023-2025

- We made *ideations* for **Camera Coach**, a Pixel feature announced at Made by Google
- Authored DreamBooth: Fine Tuning Text-to-Image Diffusion Models for Subject-Driven Generation
- DreamBooth wins a best paper award at CVPR 2023 (0.25% award rate)
- Defined new problems and research directions in the field of generative image and video models, including HyperDreamBooth, RealFill, StyleDrop, ZipLoRA, DreamBooth3D and SuTI

Ph.D. Candidate, Boston University, Boston, MA GPA : 3.98 / 4.0 2018 - 2023
Ph.D. Candidate in Computer Science
Advisor: Prof. Stan Sclaroff

M.Sc., Georgia Institute of Technology, Atlanta, GA GPA : 3.90 / 4.0 2016 - 2017
M.Sc. in Computer Science
Advisor: Prof. James M. Rehg

B.Sc. / M.Sc., École Polytechnique, Paris, France Graduate GPA : 3.86 / 4.0 2013 - 2016
N°1 Ranked French Grande Ecole in Science and Technology
Bachelor of Science & Master of Science in Data Science

Lycée Jean-Baptiste Say, Paris, France GPA : 3.80 / 4.0 2011 – 2013
N°1 Ranked Program in Physics, Technology and Industrial Science.
2-year intensive preparation in Mathematics and Physics for the nationwide Grande Ecole entrance examinations.
Admitted to Ecole Polytechnique **(0.6% acceptance rate)**.

RESEARCH LEADERSHIP AND MENTORSHIP

Google Intern Hosting
Ryan Po (Google internship host, 2025-2026) - multiplayer generative video games
Zeyu Wang (Google internship host, 2025-2026) - multimodal models for slides/chart generation
Ryan Burgert (Google internship host, 2025) - CVPR paper
Jialu Li (Google Internship host, 2024) - ICLR paper, now at Adobe
David Junhao Zhang (Google Internship host, 2024) - CVPR paper, now at Google
Litu Rout(Google Internship co-host, 2024) - 2x ICLR papers, one oral at ICLR, now at Google DeepMind
Viraj Shah (Google Internship co-host, 2023) - ECCV paper, now at Google
Luming Tang (Google Internship host, 2023) - SIGGRAPH paper, now at Google DeepMind

Other Mentorship
William Zhu (Google research project, 2023) - now at YouTube
Ariel Lee (M.Sc. in C.S., 2023, Boston University) - NeurIPS workshop paper, simulation and language models
Rupayan Mallick (PhD in C.S., 2025, Université de Bordeaux) - CVPR Workshop paper, occlusion robustness of neural networks
Benjamin Spetter-Goldstein (B.S. in C.S., 2021, Boston University) - ICML Workshop paper, adversarial attacks perceptibility
Yongxin Wang (B.S. in C.S., 2017, Georgia Tech) - ECCV paper, gaze and attention estimation
Vaishali Sarathy (M.Sc. in C.S., 2017, Georgia Tech) - facial analysis

AWARDS

CVPR Best Paper Award (2023, 0.25% award rate, one of 6 out of 2000+), CVPR 2023

Best Poster Award (2021, 4% award rate), IEEE International Conference on Automatic Face and Gesture Recognition 2021 (FG)

Twitch Research Fellowship Finalist (2020), Twitch

Outstanding Contributions Award, Google 2023

Google Research (Perception) Hackathon Award, Google 2023

DeepMind Travel Award (2020), Conference on Computer Vision and Pattern Recognition (CVPR)

Travel Award (2019), International Conference on Learning Representations (ICLR)

Distinguished Presenter Award (2019), 4th Annual Boston University Data Science Day

Dean's Fellowship (2018-2019), Boston University

Outstanding Leadership Award (2016, 2% award rate), Ecole Polytechnique

Excellence-Major Valedictorian Scholarship (2011-2016), French Government

PUBLICATIONS AND RESEARCH

[Product, Google I/O 2026]
I worked on large-scale pretraining and new capabilities for Gemini Omni, an any-to-any modality multimodal model with frontier video generation capabilities.

[Paper, arXiv 2026 - Lead Senior Author]
Ryan Po, David Junhao Zhang, Amir Hertz, Gordon Wetzstein, Neal Wadhwa, and **Nataniel Ruiz**. "MultiGen: Level-Design for Editable Multiplayer Worlds in Diffusion Game Engines." *arXiv preprint arXiv:2603.06679 (2026)*

[Paper, CVPR 2026 - Lead Senior Author]
Ryan Burgert, Charles Herrmann, Forrester Cole, Michael S. Ryoo, Neal Wadhwa, Andrey Voynov, and **Nataniel Ruiz**. "MotionV2V: Editing Motion in a Video." *CVPR (2026)*

[Product, Made by Google 2025]
I worked on Camera Coach that included *ideations* that allow for generating inspiring alternate views and compositions of a scene when taking a picture on a Google Pixel phone.

[Paper, NeurIPS 2025 - Lead Senior Author]
Luca Eyring, Shyamgopal Karthik, Alexey Dosovitskiy, **Nataniel Ruiz***, and Zeynep Akata*. "Noise Hypernetworks: Amortizing Test-Time Compute in Diffusion Models." *NeurIPS (2025)*

[Paper, CVPR 2025 - Lead Senior Author]
David Junhao Zhang, Roni Paiss, Shiran Zada, Nikhil Karnad, David E. Jacobs, Yael Pritch, Inbar Mosseri, Mike Zheng Shou, Neal Wadhwa, and **Nataniel Ruiz**. "ReCapture: Generative Video Camera Controls for User-Provided Videos using Masked Video Fine-Tuning." *CVPR (2025)*

[Paper, ICLR 2025 - Lead Senior Author]
Jialu Li, Yuanzhen Li, Neal Wadhwa, Yael Pritch, David E. Jacobs, Michael Rubinstein, Mohit Bansal, and **Nataniel Ruiz**. "Unbounded: A Generative Infinite Game of Character Life Simulation." *ICLR (2025)*

[Paper, ICLR 2025 - Intern Co-Host]
Litu Rout, Yujia Chen, **Nataniel Ruiz**, Constantine Caramanis, Sanjay Shakkottai, and Wen-Sheng Chu. "Semantic Image Inversion and Editing using Rectified Stochastic Differential Equations." *ICLR (2025)*

[Paper, ICCV 2025 - Lead Author]
Nataniel Ruiz, Yuanzhen Li, Neal Wadhwa, Yael Pritch, Michael Rubinstein, David E. Jacobs, and Shlomi Fruchter. "Magic Insert: Style-Aware Drag-and-Drop." *ICCV (2025)* **(Selected for Higlight - Top 9% of papers)**

[Paper, ICLR 2025 - Intern Co-Host]
Litu Rout, Yujia Chen, **Nataniel Ruiz**, Abhishek Kumar, Constantine Caramanis, Sanjay Shakkottai, and Wen-Sheng Chu. "RB-Modulation: Training-Free Personalization of Diffusion Models using Stochastic Optimal Control." *ICLR (2025)*
(Selected for Oral - Top 1.8% of papers)

[Paper, ECCV 2024 - Intern Co-Host]
Viraj Shah, **Nataniel Ruiz**, Forrester Cole, Erika Lu, Svetlana Lazebnik, Yuanzhen Li, and Varun Jampani. "ZipLoRA: Any Subject in Any Style by Effectively Merging LoRAs." *ECCV (2024)*

[Paper, SIGGRAPH 2023 - Intern Host]
Luming Tang, **Nataniel Ruiz**, Qinghao Chu, Yuanzhen Li, Aleksander Holynski, David E. Jacobs, Bharath Hariharan, Yael Pritch, Neal Wadhwa, Kfir Aberman, Michael Rubinstein. "RealFill: Reference-Driven Generation for Authentic Image Completion." *SIGGRAPH (2024)*

[Paper, CVPR 2023 - Lead Author]
Nataniel Ruiz, Yuanzhen Li, Varun Jampani, Wei Wei, Tingbo Hou, Yael Pritch, Neal Wadhwa, Michael Rubinstein, and Kfir Aberman. "HyperDreamBooth: Hypernetworks for Fast Personalization of Text-to-Image Models." *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)* (2024)

[Paper, NeurIPS Workshop 2023 - Lead Senior Author]
Ariel N. Lee, Cole J. Hunter, **Nataniel Ruiz**. "Platypus: Quick, Cheap and Powerful Refinement of LLMs*" Neural Information Processing Systems Workshop (NeurIPS Workshop) (2023)*

[Paper, Arxiv 2023 - Lead Senior Author]
Ariel N. Lee, Sarah Adel Bargal, Janavi Kasera, Stan Sclaroff, Kate Saenko, **Nataniel Ruiz**. "Hardwiring ViT Patch Selectivity into CNNs using Patch Mixing" *arXiv preprint arXiv:2306.17848 (2023)*

[Paper, NeurIPS 2023]
Kihyuk Sohn, **Nataniel Ruiz**, Kimin Lee, Daniel Castro Chin, Irina Blok, Huiwen Chang, Jarred Barber, Lu Jiang, Glenn Entis, Yuanzhen Li, Yuan Hao, Irfan Essa, Michael Rubinstein, Dilip Krishnan. "StyleDrop: Text-to-Image Generation in Any Style" *Neural Information Processing Systems (NeurIPS) (2023)*

[Paper, NeurIPS 2023]
Wenhu Chen, Hexiang Hu, Yandong Li, **Nataniel Ruiz**, Xuhui Jia, Ming-Wei Chang, William W. Cohen. "Subject-driven Text-to-Image Generation via Apprenticeship Learning" *Neural Information Processing Systems (NeurIPS) (2023)*

[Paper, ICCV 2023]
Amit Raj, Srinivas Kaza, Ben Poole, Michael Niemeyer, **Nataniel Ruiz**, Ben Mildenhall, Shiran Zada, Kfir Aberman, Michael Rubinstein, Jonathan Barron, Yuanzhen Li, Varun Jampani. "DreamBooth3D: Subject-Driven Text-to-3D Generation" *International Conference on Computer Vision (ICCV) (2023)*

[Paper, CVPR 2023 - Lead Author]
Nataniel Ruiz, Yuanzhen Li, Varun Jampani, Yael Pritch, Michael Rubinstein, Kfir Aberman. "DreamBooth: Fine Tuning Text-to-Image Diffusion Models for Subject-Driven Generation" *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)* (2023)
(CVPR Best Student Paper Honorable Mention, 0.25% award rate - Top 100 Cited AI Papers in 2022)

[Paper, AAAI 2023 - Lead Author]
Nataniel Ruiz, Sarah Adel Bargal, Cihang Xie, Stan Sclaroff. "Practical Disruption of Image Translation Deepfake Networks" *AAAI Conference on Artificial Intelligence* (AAAI) (2023)

[Paper, NeurIPS 2022 - Lead Author]
Nataniel Ruiz, Cihang Xie, Sarah Adel Bargal, Kate Saenko, Stan Sclaroff. "Finding Differences Between Transformers and ConvNets Using Counterfactual Simulation Testing" *Neural Information Processing Systems (NeurIPS)* (2022)

[Paper, 3DV 2022 - Lead Author]
Nataniel Ruiz, Miriam Bellver, Timo Bolkart, Ambuj Arora, Ming C. Lin, Javier Romero, Raja Bala. "Human Body Measurement Estimation with Adversarial Augmentation" *International Conference on 3D Vision (3DV)* (2022)

[Paper, CVPR 2022 - Lead Author]
Nataniel Ruiz, Adam Kortylewski, Weichao Qiu, Cihang Xie, Sarah Adel Bargal, Alan Yuille*, Stan Sclaroff*. "Simulated Adversarial Testing of Face Recognition Models" *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)* (2022)

[Paper, ICML Workshop 2021 - Intern Co-Host]
Benjamin Spetter-Goldstein, **Nataniel Ruiz**, Sarah Adel Bargal. "Examining the Human Perceptibility of Black-Box Adversarial Attacks on Face Recognition" *ICML Adversarial Machine Learning Workshop* (2021)

[Paper, BMVC 2021 - Lead Author]
Nataniel Ruiz, Barry-John Theobald, Anurag Ranjan, Ahmed Hussein Abdelaziz, Nicholas Apostoloff. "MorphGAN: One-Shot Face Synthesis GAN for Detecting Recognition Bias" *British Machine Vision Conference (BMVC)* (2021)

[Paper, ICLR Workshop 2021 - Lead Author]
Nataniel Ruiz, Sarah Adel Bargal, Stan Sclaroff. "Protecting Against Image Translation Deepfakes by Leaking Universal Perturbations from Black-Box Neural Networks" *ICLR Security and Safety in Machine Learning Systems Workshop* (2021)

[Paper, FG 2021 - Lead Author]
Nataniel Ruiz, Hao Yu, Danielle Allessio, Mona Jalal, Ajjen Joshi, Thomas Murray, John Magee, Jacob Whitehill, Vitaly Ablavsky, Ivon Arroyo, Beverly Woolf, Stan Sclaroff, and Margrit Betke. "Leveraging Affect Transfer Learning for Behavior Prediction in an Intelligent Tutoring System" *IEEE International Conference on Automatic Face and Gesture Recognition 2021 (FG)* (2021)
(Selected for Oral and Best Poster Award - 4% award rate)

[Paper, ECCV Workshop 2020 - Lead Author]
Nataniel Ruiz, Sarah Adel Bargal, Stan Sclaroff. "Disrupting DeepFakes: Adversarial Attacks Against Conditional Image Translation Networks and Facial Manipulation Systems" *CVPR 2020 Workshop on Adversarial Machine Learning in Computer Vision* (2020) **(Oral)** and published at *European Conference on Computer Vision (ECCV) Workshop* (2020)

[Paper, CVPR 2020]
Eunji Chong, Yongxin Wang, **Nataniel Ruiz**, James M. Rehg. "Detecting Attended Visual Targets in Video" *The IEEE Conference on Computer Vision and Pattern Recognition (CVPR)* (2020)

[Paper, ICLR 2019 - Lead Author]
Nataniel Ruiz, Samuel Schulter, Manmohan Chandraker. "Learning To Simulate" *International Conference on Learning Representations (ICLR)* (2019)

[Paper, ECCV 2018]
Eunji Chong, **Nataniel Ruiz**, Yongxin Wang, Yun Zhang, Agata Rozga, James M. Rehg. "Connecting Gaze, Scene, and Attention: Generalized Attention Estimation via Joint Modeling of Gaze and Scene Saliency." *The European Conference on Computer Vision (ECCV)*, (2018), pp. 383-398

[Paper, Arxiv 2018]
Meera Hahn, **Nataniel Ruiz**, Jean-Baptiste Alayrac, Ivan Laptev, James M Rehg. "Learning to Localize and Align Fine-Grained Actions to Sparse Instructions." *arXiv preprint arXiv:1809.08381* (2018)

[Paper, CVPRW 2018 - Lead Author]
Nataniel Ruiz, Eunji Chong, and James M. Rehg. "Fine-Grained Head Pose Estimation Without Keypoints." In *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition Workshops*, pp. 2074-2083. (2018) **(Oral)**

[Paper, UBICOMP 2017, IMWUT 2017]
Eunji Chong, Katha Chanda, Zhefan Ye, Audrey Southerland, **Nataniel Ruiz**, Rebecca M. Jones, Agata Rozga, and James M. Rehg. "Detecting Gaze Towards Eyes in Natural Social Interactions and Its Use in Child Assessment." *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies* 1, no. 3 (2017): 43
(Selected for Oral and Distinguished Paper Award - 3% award rate)

[Paper, Arxiv 2017 - Lead Author]
Nataniel Ruiz, and James M. Rehg. "Dockerface: an Easy to Install and use Faster R-CNN Face Detector in a Docker Container." *arXiv preprint arXiv:1708.04370* (2017)

PATENTS

Theobald, Barry-John, Nataniel Ruiz, et al.. "Face image generation with pose and expression control." U.S. Patent No. 11,475,608. 18 Oct. 2022.
Schulter, Samuel, Nataniel Ruiz, et al. "Learning to simulate." U.S. Patent No. 11,518,382. 6 Dec. 2022.
Ruiz, Nataniel, et al. "Editing Video Motion Structure." U.S. Patent Application. 17 Oct. 2025.
Ruiz, Nataniel, et al. "Generative Video Camera Controls for Input Videos." U.S. Patent Application No. 19/290,131. 31 Oct. 2025.
Yujia, Chen, Nataniel Ruiz, et al. "Image Inversion and Editing Using Rectified Flow Neural Networks." U.S. Patent Application No. 19/259,949. 3 Oct. 2025.
Ruiz, Nataniel, et al. "Generating Consistent Images Using a Denoising Neural Network with Adapter Layer Blocks." U.S. Patent Application. 17 Sep. 2024.
Ruiz, Nataniel, et al. "Style-Aware Drag-and-Drop Insertion of Subjects into Images." U.S. Patent Application No. 19/122,842. 9 Jun. 2025.
Ruiz, Nataniel, et al. "Reference-Driven Generation for Image Filling." U.S. Patent Application No. 19/400,211. 5 Mar. 2026.
Ruiz, Nataniel, et al. "Auxiliary Neural Network for Fast Adaptation of Pre-Trained Neural Networks." U.S. Patent Application No. 19/322,404. 30 Dec. 2025.
Li, Yuanzhen, Nataniel Ruiz, et al. "Optimizing Generative Machine-Learned Models for Subject-Driven Text-to-3D Generation." U.S. Patent No. 12,561,905. 20 Mar. 2024.
Aberman, Kfir, Nataniel Ruiz, et al. "Personalized Text-to-Image Diffusion Model." U.S. Patent No. 12,555,275. 13 Dec. 2023.
Zhang, Serena, Nataniel Ruiz, et al. "Reference-to-Image/Video Generation Using a Denoising Model." PCT Patent Application. 19 May 2026.

PRESS

DreamBooth in Wikipedia

TWIML AI DreamBooth interview

Learning to Simulate in Medium
- 18,000+ visits
- Front page on Y Combinator's Hacker News
- Front page on Towards Data Science

Disrupting Deepfakes
- TWIML AI Podcast interview
- Mentioned on Forbes
- Front page on Boston University's The Brink
- Front page on Y Combinator's Hacker News
- Front page on Reddit /r/machinelearning subreddit

PRESENTATIONS

Invited Talks

Jun	2025	CVPR AI for Creative Visual Content Generation, Editing and Understanding Workshop, keynote
Jun	2025	ICCV Personalization in Generative AI Workshop, keynote
Oct	2024	Stanford, seminar
Sep	2024	MIT Media Lab, seminar
Sep	2024	Brown University, seminar
Sep	2024	CalTech, seminar
Sep	2024	UC Berkeley, seminar
Sep	2024	UT Austin, seminar
Sep	2024	Harvard, seminar

Sep 2024 Carnegie Mellon University, seminar

Jul 2024 Northeastern University, seminar

Mar 2024 University of Memphis, seminar

Sep 2023 TWIML AI Podcast, interview

Jun 2023 REF Group, Bolivia, guest talk

May 2023 Microsoft, research presentation

Mar 2023 University of Bristol, research presentation

Mar 2023 Hugging Face, research presentation

Dec 2022 TikTok, research presentation

Dec 2022 Adobe Research, research presentation

Dec 2022 Stanford, research presentation

Aug 2022 Google Perception, research presentation

Jul 2022 Google Creative Camera Seminar, research presentation

Jul 2022 Google Media Integrity, research presentation

Jun 2022 Google Perception, research presentation

Apr 2022 Boston University, Department of Computer Science, AI Research Lab, seminar

Feb 2022 Johns Hopkins University, Department of Computer Science (Prof. Alan Yuille lab), seminar

Aug 2021 Amazon Softlines Research Presentation, research presentation

Jun 2021 Max Planck Institute for Intelligent Systems, Perceiving Systems (Prof. Michael Black lab), seminar

Sep 2020 Johns Hopkins University, Department of Computer Science (Prof. Alan Yuille lab), seminar

Sep 2020 University of Massachusetts at Amherst, College of Computer Science (Prof. Beverly Woolf class), guest lecture

Aug 2020 Apple Inc., Senior Director of AI and Machine Learning (Prof. Carlos Guestrin), research presentation

May 2020 TWIML AI Podcast, interview

Mar 2020 Boston University, Department of Computer Science, AI Research Lab, seminar

Feb 2020 Massachusetts Institute of Technology, CSAIL, Vision and Graphics Group (Prof. Antonio Torralba lab), seminar

Nov 2019 Georgia Institute of Technology, School of Interactive Computing (Prof. James M. Rehg lab), seminar

Oct 2019 University of Massachusetts at Amherst, College of Computer Science (Prof. Beverly Woolf class), guest lecture

Sep 2019 Apple Inc., Machine Learning Vice President (Dr. John Giannandrea), research presentation

Aug 2019 Apple Inc., Siri, research presentation

Aug 2019 Apple Inc., AI Research, research presentation

Feb 2019 Boston University, Department of Computer Science, AI Research Lab, seminar

Feb 2019 Boston University Data Science Day, distinguished presenter

Jan 2019 Boston University, AI Research Lab Retreat, invited presentation

Jan 2019 KPMG, Bolivia, machine learning seminar

Aug 2018 NEC Laboratories America Inc., research presentation

Contributed Talks

Jun 2024 CVPR Google Booth, oral presentation

Jun 2023 CVPR Award Nominee Oral (12 out of 2000+ accepted papers), oral presentation

Dec 2021 IEEE International Conference on Automatic Face and Gesture Recognition (FG), oral presentation

May 2021 ICLR, Security and Safety in Machine Learning Systems Workshop, oral presentation

Aug 2020 ECCV, Advances in Image Manipulation Workshop, oral presentation

Jun 2020 CVPR, Workshop on Adversarial Machine Learning in Computer Vision, oral presentation

Dec 2019 New England Computer Vision Workshop (NECV), Brown University, oral presentation

Sep 2019 Machine Intelligence Conference (MIC), Boston University, oral presentation

Jun 2018 CVPR, Automatic Face and Gesture Recognition Workshop, oral presentation

Posters

Oct 2025 International Conference on Computer Vision (ICCV)

Jun 2025 IEEE Computer Vision and Pattern Recognition Conference (CVPR)

Sep 2024 European Conference on Computer Vision (ECCV)

Aug 2024 SIGGRAPH

Jun 2024 IEEE Computer Vision and Pattern Recognition Conference (CVPR)

Dec 2023 Neural Information Processing Systems (NeurIPS)

Jun 2023 IEEE Computer Vision and Pattern Recognition Conference (CVPR)

Feb 2023 AAAI Conference on Artificial Intelligence (AAAI)

Nov 2022 Neural Information Processing Systems (NeurIPS)

Sep 2022 International Conference on 3D Vision (3DV)

Jun 2022 IEEE Computer Vision and Pattern Recognition Conference (CVPR)

Dec 2021 IEEE International Conference on Automatic Face and Gesture Recognition (FG)

Nov 2021 British Machine Vision Conference (BMVC)

May 2021 ICLR, Security and Safety in Machine Learning Systems Workshop

Aug 2020 ECCV, Advances in Image Manipulation Workshop

Jun 2020 CVPR, Workshop on Adversarial Machine Learning in Computer Vision

Dec 2019 New England Computer Vision Workshop (NECV), Brown University

May 2019 International Conference on Learning Representations (ICLR)

Feb 2019 Boston University Data Science Day

Jun 2018 CVPR, Automatic Face and Gesture Recognition Workshop

INTERNSHIP AND STUDENT RESEARCH EXPERIENCE

Google Research, Cambridge, MA Aug 2022 - May 2023

Research Intern

- DreamBooth wins a Best Paper Award at CVPR 2023 (0.25% award rate)
- Co-author on the Subject-driven Text-to-Image Generation via Apprenticeship Learning (SuTI) paper
- Co-author on DreamBooth3D
- Co-author on StyleDrop

Google Research, Mountain View, CA Jun 2022 - Aug 2022

Research Intern

- Working with **Kfir Aberman**, **Yael Pritch**, **Varun Jampani**, **Yuanzhen Li** and **Miki Rubinstein** on subject-driven generation using text-to-image diffusion models. Released DreamBooth.

Amazon, New York City, NY Jun 2021 - Oct 2021

Research Intern

- Working with **Dr. Javier Romero**, **Prof. Ming C. Lin**, **Dr. Timo Bolkart** and **Dr. Raja Bala** on computer vision, simulation and machine learning. 3DV publication.

Apple AI Research, Cupertino, CA Jun 2020 - Aug 2020

Research Intern

- Worked with **Dr. Nick Apostoloff** and **Dr. Barry Theobald** on a one-shot face synthesis GAN for detecting recognition bias. BMVC publication.

Apple AI Research, Cupertino, CA May 2019 - Aug 2019
Research Intern
- Worked with **Dr. Nick Apostoloff** and **Dr. Barry Theobald** on a one-shot face synthesis GAN for detecting recognition bias.

Boston University, Boston, MA Sep 2018 - Present
Research Fellow
- Working with **Prof. Stan Sclaroff**, **Prof. Margrit Betke, Dr. Sarah Adel Bargal** on topics related to facial analysis, image translation, adversarial attacks, simulation and behavior understanding.

NEC Laboratories America, Inc, Cupertino, CA Feb 2018 - Aug 2018
Research Intern
- Worked with **Prof. Manmohan Chandraker** and **Dr. Samuel Schulter** on topics related to self-driving car perception, visual data simulation and reinforcement learning. One ICLR publication on the topic of learning to simulate.

Georgia Institute of Technology, Atlanta, GA Dec 2016 – Dec 2017
Graduate Research Assistant
- Worked with **Prof. James Rehg** on facial analysis, behavior understanding, first person vision and mobile computer vision.
- Co-authored four papers, one tech-report and released three open-source computer vision applications in 2017 while taking a full-time course load.

Massachusetts Institute of Technology, Cambridge, MA May 2016 – Aug 2016
Visiting Research Assistant (funding: Bill and Melinda Gates Foundation Grant)
- Worked with **Dr. Lalana Kagal** and **Dr. Kalyan Veeramachaneni** building a deep learning application on Android for visual detection of diseases in cassava plant leaves. Deployed the application on the field in Kampala, Uganda.

REVIEWER

[Last updated: 2025 - I usually review 3-4 conferences top conferences a year]

SIGGRAPH 2023, 2024

European Conference on Computer Vision (ECCV) 2024

Conference on Computer Vision and Pattern Recognition (CVPR) 2025, 2022, 2021, 2018

International Conference on Computer Vision (ICCV) 2023, 2021, 2019

International Conference on Learning Representations (ICLR) 2020, 2024

Conference on Neural Information Processing Systems (NeurIPS) 2020, 2023

International Conference on Machine Learning (ICML) 2021

AAAI Conference on Artificial Intelligence (AAAI) 2022

Transactions on Pattern Analysis and Machine Intelligence (TPAMI) 2020, 2019

Winter Conference on Applications of Computer Vision (WACV) 2022, 2021, 2020

Asian Conference on Computer Vision (ACCV) 2020

CVPR AI for Content Creation Workshop 2021

ICLR Workshop on Socially Responsible Machine Learning 2022, 2021

ICLR Workshop on Security and Safety in Machine Learning Systems 2021

ECCV Adversarial Robustness in the Real World Workshop 2022, 2020

ECCV Advances in Image Manipulation Workshop 2020

ECCV Out-of-Distribution Generalization in Computer Vision Workshop 2022

ICLR Workshop on Socially Responsible Machine Learning 2022

Pattern Recognition 2020

Transactions on Neural Networks and Learning Systems (TNNLS) 2020, 2019, 2018

Transactions on Cybernetics 2018

OPEN SOURCE PROJECTS

2,000+ stars on original machine learning GitHub repositories at github.com/natanielruiz

Disrupting Deepfakes: Adversarial Attacks on Conditional Image Translation Networks
- Adversarial attacks on image translation systems to prevent modification of a person's images

Deep Learning Head Pose Estimation
- Head pose estimation deep neural network bundled with pre-trained models.

Android-YOLO
- Open source real-time object detection deep learning system on an Android device.

Dockerface
- Open source deep learning face detection in a Docker container.

EGTEA Gaze+ Dataset
- Co-lead the annotation of a large open-access egocentric vision action recognition dataset.

LEADERSHIP & AFFILIATIONS

Adversarial Robustness in the Real World, ECCV 2022 Workshop 2022
Organizer
- Organizing committee and program committee.

Adversarial Robustness in the Real World, ICCV 2021 Workshop 2021
Organizer
- Organizing committee and program committee.
- Panel discussion host and moderator

TEDxEcolePolytechnique, Ecole Polytechnique 2014 – 2016
President and founder
- Founded and organized the first TEDx conference at Ecole Polytechnique.
- Recruited and managed the 2015 and 2016 student teams.

Entrepreneurship Student Society, Ecole Polytechnique 2014 – 2016
Speaker & Startup Relations Manager
- Organized the first Startup Showcase and job fair at Polytechnique.
- Obtained the participation of over ten startups for the Startup Showcase.
- Obtained the participation of entrepreneur coaches and a panel of senior entrepreneur judges for the Startup Weekend event.

LANGUAGES

Fluent in English, French and Spanish.