2260 Hayward St.
Ann Arbor, MI 48109
chris.rockwell8@gmail.com
https://crockwell.github.io/

# Chris Rockwell

---

EDUCATION

**University of Michigan** — Ann Arbor, MI
*Ph.D. in Computer Science and Engineering* — Sep. 2020 - Aug. 2025
- Advisors: Justin Johnson, David F. Fouhey

*Master of Science, Computer Science and Engineering* — Sep. 2018 - May 2020
- GPA: 4.00/4.00
- Advisors: David F. Fouhey, Jia Deng

*Bachelor of Science, Economics* — Sep. 2011 - May 2015
*Minors in Computer Science, Mathematics*
- GPA: 3.95/4.00

INTERESTS

Computer Vision, Machine Learning

---

PROFESSIONAL
EXPERIENCE

**NVIDIA, Deep Imagination Research Group** — Santa Clara, CA
*Research Intern* | Hosts: Chen-Hsuan Lin, Tsung-Yi Lin — Mar. 2024 - Oct. 2024
- Systematically curated and annotated cameras on 100K diverse, dynamic Internet videos

**Meta Reality Labs, Computational Photography Research** — Seattle, WA
*Research Scientist Intern* | Hosts: Hung-Yu Tseng, Jia-Bin Huang — May 2022 - Dec. 2022
- Produced lightweight radiance field conditioned upon a single image

**TuringSense, INC.** — Santa Clara, CA
*Technical Consultant, Computer Vision* — Feb. 2021 - Apr. 2021
- Suggested and implemented improvements to TuringSense home yoga product

**Citadel, LLC.** — New York, NY
*Trader, Global Fixed Income* — Apr. 2017 - Oct. 2017
- Designed and executed quantitative trading strategies to enhance team's portfolio

**BNP Paribas** — New York, NY
*Interest Rates and FX Structuring Analyst* — Jul. 2015 - Mar. 2017
- Created systematic hedging strategies and priced bespoke options for institutional clients

---

PUBLICATIONS

Dynamic Camera Poses and Where to Find Them
**Chris Rockwell**, Joseph Tung, Tsung-Yi Lin, Ming-Yu Liu, David F. Fouhey and Chen-Hsuan Lin
CVPR, 2025
Project Page

FAR: Flexible, Accurate and Robust 6DoF Relative Camera Pose Estimation
**Chris Rockwell**, Nilesh Kulkarni, Linyi Jin, JJ Park, Justin Johnson and David F. Fouhey
CVPR, 2024 (**Highlight**)
Project Page

Scalable 3D Captioning with Pretrained Models
Tiange Luo[*], **Chris Rockwell**[*], Honglak Lee[†] and Justin Johnson[†]
NeurIPS (Datasets and Benchmarks Track) 2023
Project Page

The 8-Point Algorithm as an Inductive Bias for Relative Pose Prediction by ViTs
**Chris Rockwell**, Justin Johnson and David F. Fouhey
3DV 2022
Project Page

PlaneFormers: From Sparse View Planes to 3D Reconstruction
Samir Agarwala, Linyi Jin, **Chris Rockwell** and David F. Fouhey
ECCV 2022
Project Page

FWD: Real-time Novel View Synthesis with Forward Warping and Depth
Ang Cao, **Chris Rockwell** and Justin Johnson
CVPR 2022
Project Page

Understanding 3D Object Articulation in Internet Videos
Shengyi Qian, Linyi Jin, **Chris Rockwell**, Siyi Chen and David F. Fouhey
CVPR 2022
Project Page

PixelSynth: Generating a 3D-Consistent Experience from a Single Image
**Chris Rockwell**, David F. Fouhey and Justin Johnson
ICCV 2021
Project Page

Full-Body Awareness from Partial Observations
**Chris Rockwell** and David F. Fouhey
ECCV 2020
Project Page

---

RESEARCH
EXPERIENCE

**NVIDIA, Deep Imagination Research Group**              Santa Clara, CA
*Research Intern* | Hosts: Chen-Hsuan Lin, Tsung-Yi Lin      Mar. 2024 - Oct. 2024

Internet Scale 3D Curation – *Dynamic Camera Poses*
• Curate and annotate cameras for 100K dynamic Internet videos from 3.2M diverse videos

**Meta Reality Labs, Computational Photography Research**      Seattle, WA
*Research Scientist Intern* | Hosts: Hung-Yu Tseng, Jia-Bin Huang   May 2022 - Dec. 2022

Novel View Synthesis
• Produce lightweight radiance field conditioned upon a single image

**Michigan Vision Lab**              Ann Arbor, MI
*Graduate Research Assistant* | Advisor: Justin Johnson      May 2020 - Aug. 2025

Internet Scale 3D-Text Modeling – *Scalable 3D Captioning*
• Apply powerful VLM pipeline to caption 660K 3D assets, finetune text-to-3D models

Novel View Synthesis
• *PixelSynth*: Introduce powerful generative model, enabling 3D-consistent extrapolation
• *FWD*: Real-time NVS using pointcloud and transformer; predecessor to 3DGS

**Fouhey AI Lab**              Ann Arbor, MI
*Graduate Research Assistant* | Advisor: David F. Fouhey      May 2019 - Aug. 2025

Relative Camera Pose Estimation
• *8-Point ViT*: Include 8-Point machinery in ViT block to improve relative pose estimation
• *FAR*: Fuse correspondence and learning-based pipeline, yielding best-of-both estimates

3D Reconstruction – *PlaneFormers*

- Introduce transformer to learn to refine planar reconstruction

3D Object Articulation – *Understanding 3D Object Articulation*
- Collect rich dataset of people articulating objects and learn axes of object articulation

3D Human Pose Estimation – *Full-Body Awareness*
- Propose self-training method to substantially improve human pose on internet video

**Princeton Vision and Learning Lab**                                        Princeton, NJ
*Graduate Research Assistant* | Advisor: Jia Deng                      May 2018 - May 2019

2D Human Pose Estimation
- Add bottleneck-to-attention module to improve *Stacked Hourglass* accuracy 0.7%

Meta-Learning
- Improve finetune model to within 0.1 *avg. rank* of meta-learning baseline on *Meta-Dataset*

**Strategic Reasoning Group**                                              Ann Arbor, MI
*Undergraduate Research Assistant* | Advisor: Michael P. Wellman      May 2013 - Jul. 2013

Agent-based simulation of High-Frequency Trading and Latency Arbitrage
- Model trading agents with varying speeds to measure effects of latency arbitrage

---

SERVICE     Reviewer: CVPR (2023 Outstanding Reviewer), NeurIPS (2023 Top Reviewer), ICCV, ECCV, 3DV, ICLR, ICML, TPAMI
AI4ALL Project Instructor: lead vision project for nine underrepresented high-schoolers
AI4ALL Curriculum Advisory Board Member: contributed to national curriculum
Technical Mentor: mentored five students with David F. Fouhey, including one in African Undergraduate Research Adventure (AURA); mentored two BNP interns
Graduate Student Advisory Committee: represented CSE students to improve experience