

# Chris Rockwell

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Ann Arbor, MI 48109  
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<https://crockwell.github.io/>  
517.282.6402

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EDUCATION	<b>University of Michigan</b> <i>Ph.D. in Computer Science and Engineering</i> • Advisors: Justin Johnson, David F. Fouhey  <i>Master of Science, Computer Science and Engineering</i> • GPA: 4.00/4.00 • Advisors: David F. Fouhey, Jia Deng  <i>Bachelor of Science, Economics</i> <i>Minors in Computer Science, Mathematics</i> • GPA: 3.95/4.00	Ann Arbor, MI Sep. 2020 - Aug. 2025 (Expected)  Sep. 2018 - May 2020  Sep. 2011 - May 2015
INTERESTS	Computer Vision, Machine Learning	

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PUBLICATIONS	<p>Dynamic Camera Poses and Where to Find Them <b>Chris Rockwell</b>, Joseph Tung, Tsung-Yi Lin, Ming-Yu Liu, David F. Fouhey and Chen-Hsuan Lin CVPR, 2025 <a href="#">Project Page</a></p> <p>FAR: Flexible, Accurate and Robust 6DoF Relative Camera Pose Estimation <b>Chris Rockwell</b>, Nilesh Kulkarni, Linyi Jin, JJ Park, Justin Johnson and David F. Fouhey CVPR, 2024 (<a href="#">Highlight</a>) <a href="#">Project Page</a></p> <p>Scalable 3D Captioning with Pretrained Models Tianghe Luo*, <b>Chris Rockwell</b>*, Honglak Lee<sup>†</sup> and Justin Johnson<sup>†</sup> NeurIPS (Datasets and Benchmarks Track) 2023 <a href="#">Project Page</a></p> <p>The 8-Point Algorithm as an Inductive Bias for Relative Pose Prediction by ViTs <b>Chris Rockwell</b>, Justin Johnson and David F. Fouhey 3DV 2022 <a href="#">Project Page</a></p> <p>PlaneFormers: From Sparse View Planes to 3D Reconstruction Samir Agarwala, Linyi Jin, <b>Chris Rockwell</b> and David F. Fouhey ECCV 2022 <a href="#">Project Page</a></p> <p>FWD: Real-time Novel View Synthesis with Forward Warping and Depth Ang Cao, <b>Chris Rockwell</b> and Justin Johnson CVPR 2022 <a href="#">Project Page</a></p> <p>Understanding 3D Object Articulation in Internet Videos Shengyi Qian, Linyi Jin, <b>Chris Rockwell</b>, Siyi Chen and David F. Fouhey CVPR 2022 <a href="#">Project Page</a></p> <p>PixelSynth: Generating a 3D-Consistent Experience from a Single Image <b>Chris Rockwell</b>, David F. Fouhey and Justin Johnson ICCV 2021 <a href="#">Project Page</a></p>
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Full-Body Awareness from Partial Observations  
**Chris Rockwell** and David F. Fouhey  
ECCV 2020  
[Project Page](#)

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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 Camera Curation – *Dynamic Camera Poses*

- Curate and annotate cameras for 100K dynamic Internet videos from 3.1M 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 - Present

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 - Present

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

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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
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PROFESSIONAL EXPERIENCE	<table><tr><td><b>TuringSense, INC.</b> <i>Technical Consultant, Computer Vision</i></td><td>Santa Clara, CA Feb. 2021 - Apr. 2021</td></tr><tr><td colspan="2">• Suggested and implemented improvements to TuringSense home yoga product</td></tr><tr><td><b>Citadel, LLC.</b> <i>Trader, Global Fixed Income</i></td><td>New York, NY Apr. 2017 - Oct. 2017</td></tr><tr><td colspan="2">• Designed, implemented and executed trading strategies to enhance team's portfolio</td></tr><tr><td><b>BNP Paribas</b> <i>Interest Rates and FX Structuring Analyst</i></td><td>New York, NY Jul. 2015 - Mar. 2017</td></tr><tr><td colspan="2">• Created systematic hedging strategies and priced bespoke options for institutional clients</td></tr></table>	<b>TuringSense, INC.</b> <i>Technical Consultant, Computer Vision</i>	Santa Clara, CA Feb. 2021 - Apr. 2021	• Suggested and implemented improvements to TuringSense home yoga product		<b>Citadel, LLC.</b> <i>Trader, Global Fixed Income</i>	New York, NY Apr. 2017 - Oct. 2017	• Designed, implemented and executed trading strategies to enhance team's portfolio		<b>BNP Paribas</b> <i>Interest Rates and FX Structuring Analyst</i>	New York, NY Jul. 2015 - Mar. 2017	• Created systematic hedging strategies and priced bespoke options for institutional clients	
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