2260 Hayward St.
Ann Arbor, MI 48109
cnris@umich.edu
https://crockwell.github.io/
517.282.6402

Chris Rockwell

EDUCATION

University of Michigan   Ann Arbor, MI
Ph.D. in Computer Science and Engineering   Sep. 2020 - Present
- 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 and Mathematics
- GPA: 3.95/4.00

INTERESTS

Computer Vision, Machine Learning

PUBLICATIONS

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

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

Michigan Vision Lab — Ann Arbor, MI
Graduate Research Assistant | Advisor: Justin Johnson — May 2020 - Present

3D-Text Modeling
- *Scalable 3D Captioning*: Automatically collect large-scale, high-quality 3D-text data

Novel View Synthesis
- *FWD*: Engineer real-time, high-quality novel view synthesis from sparse views
- *PixelSynth*: Create an immersive experience from a single image

Fouhey AI Lab — Ann Arbor, MI
Graduate Research Assistant | Advisor: David F. Fouhey — May 2019 - Present

Relative Camera Pose Estimation
- *8-Point ViT*: Modify ViT block to improve relative pose estimation
- *FAR*: Improve pose using hybrid correspondence-and-learning-based approach

3D Reconstruction – *PlaneFormers*
- Use transformer 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*
- Introduce self-training method to substantially improve pose estimation on internet video

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

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 fine-tune 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

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 four undergrads with David F. Fouhey, including one remote in the African Undergraduate Research Adventure (AURA); mentored two BNP interns
Graduate Student Advisory Committee: represented CSE students to improve experience

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 (Core Team)   Apr. 2017 - Oct. 2017

• Designed, implemented and executed trading strategies to enhance team's portfolio

BNP Paribas   New York, NY
Interest Rates and FX Structuring Analyst (Intern in summer 2014) Jul. 2015 - Mar. 2017

• Created systematic hedging strategies and priced bespoke options for institutional clients