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517.282.6402

# Chris Rockwell

## Education

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

*Master of Science, Computer Science and Engineering* — Sep. 2018 - May 2020
• GPA: 4.00/4.00 | GRE Quantitative: 170/170
• Advisors: David F. Fouhey, Jia Deng

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

## Interests

Computer Vision, Machine Learning

## Publications

Full-Body Awareness from Partial Observations
**Chris Rockwell** and David F. Fouhey
To Appear in ECCV, 2020.

## Research Experience

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

3D Human Pose Estimation
• Introduce self-training method to substantially improve pose estimation on internet video
• Annotate four internet video datasets for eval; present out-of-image keypoint evaluation
• A/B Testing selects our method over baselines 2.4x-8.9x more frequently over four datasets.
• Work to appear in ECCV, 2020

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

2D Human Pose Estimation
• Improved *Stacked Hourglass* score from 90.9% to 91.3% on MPII using better regularization
• Used bottleneck-to-attention mechanism with reg. to improve 2HG accuracy 0.7%
• Increased precision of network confidence, explored utilizing for curriculum training

Meta-Learning
• Brought 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
• Implemented security information processors to help build market microstructure

## Professional Experience

**Citadel LLC** — New York, NY
*Trader, Global Fixed Income (Core Team)* — Apr. 2017 - Oct. 2017

Assisted Portfolio Manager (PM) and Head of Fund manage risk and generate trade ideas
• Built various screeners and monitors to pitch linear relative value trades in G10 rates

• Led research for and managed regression-based statistical arbitrage trading strategy

Designed and implemented tools to better manage PM and Head of Fund's portfolio
• Constructed custom clustering algorithm to view trades in an elegant manner
• Wrote script using scipy to optimize portfolio Sharpe ratio subject to constraints

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

Priced, modeled and executed exotic and bespoke products
• Created pricing models and back-tested performance of bespoke structures using Python
• Co-managed $1bn inflation-linked TRS: extended pricing models, priced hedges

Created and analyzed systematic hedging strategies and trade ideas
• Engineered framework to aggregate corporate FX risk and evaluate hedging strategies using multiple factors, used this to help redesign multinational corporation's hedging program

## Honors & Awards

**University of Michigan** Ann Arbor, MI

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|---|---|
| Research Experience for Undergraduates Award | 2013 |
| James B. Angell Scholar | 2013, 2014, 2015, 2016 |
| William J. Branstrom Freshman Prize | 2012 |
| University Honors | 2011,2012,2013,2014,2015 |
| Phi Kappa Phi Honors Society | 2015 |

## Teaching & Activities

AI4ALL Project Instructor: lead vision project for nine underrepresented high-schoolers
Technical Mentor: mentored two undergrads with Prof. Fouhey, mentored two BNP interns
Academic Mentor: mentored five undergraduate CSE students; grad orientation panelist
Graduate Student Advisory Committee: represented CSE students to improve experience
Grader: EECS 598 Deep Learning

## Salient Courses

**University of Michigan, MS**:
Ecological Approach to Perception: explored embodied amodal perception of novel objects
Advanced AI: replicated *Image Generation from Scene Graphs*, evaluated using VQA
Machine Learning: replicated and improved accuracy of *Stacked Hourglass Networks*
Self-Driving Cars: fine-tuned *Squeeze and Excitation ResNet* for road-side classification
Advanced Data Mining: performed link prediction using *SDNE* on sparse, temporal graphs
Deep Learning for Computer Vision (no class project)

**University of Michigan, BS**:
AI, Linear Algebra, Econometrics, Adv. Calculus, Numerical Methods, Algorthithms & DS

Last Updated 1 Aug 2020