

JONATHAN TOMPSON

Address and telephone number available on request

jonathantompson@gmail.com

jonathantompson.com

EDUCATION

NYU, Courant Institute of Mathematical Sciences		2011-2015
Ph.D. CS	Advisor: Prof. Chris Bregler (secondary: Yann LeCun)	GPA: 4.0/4.0
Columbia University, SEAS		2006-2007
M.S. EE	Advisor: Prof. Peter Kinget	GPA: 3.6/4.0
Harvard University, DEAS		2002-2006
S.B. EE and CS	Advisor: Prof. Gu-Yeon Wei	with honors

PUBLICATIONS, INVITED TALKS AND AWARDS

-
- I. Kostrikov, K. Agrawal, D. Dwibedi, S. Levine, **J. Tompson**, *Discriminator-Actor-Critic: Addressing Sample Inefficiency and Reward Bias in Adversarial Imitation Learning*, ICLR 2019
 - Invited talk: *Fluid Simulation and PDE simulation using deep-learning*, Stanford's ERE seminar 2018.
 - S. Suwajanakorn, N. Snavely, **J. Tompson**, M. Norouzi, *Discovery of Semantic 3D Keypoints via End-to-end Geometric Reasoning*, ORAL presentation at NIPS 2018.
 - D. Dwibedi, **J. Tompson**, C. Lynch, P. Sermanet, *Learning Actionable Representations from Visual Observations*, International Conference on Intelligent Robots (IROS) 2018.
 - G. Papandreou, T. Zhu, L. Chen, S. Gidaris, **J. Tompson**, and K. Murphy, *PersonLab: Person Pose Estimation and Instance Segmentation with a Part-Based Geometric Embedding Model*, ECCV 2018
 - D. Dwibedi, **J. Tompson**, C. Lynch, P. Sermanet, *Self-Supervised Representation Learning for Continuous Control*, Workshop in Machine Learning in the Planning and Control of Robot Motion at ICRA 2018
 - K. Schlachter, C. DeFant, S. Herscher, **J. Tompson**, *Beyond Photo Realism for Domain Adaptation from Synthetic Data*, Submitted work 2018.
 - D. Dwibedi, P. Sermanet, **J. Tompson**, *Temporal Reasoning in Videos using Convolutional Gated Recurrent Units*, Brave New Ideas in Video Understanding Workshop at CVPR 2018
 - Invited Talk: RSS 2017 Workshop on Articulated Tracking, *Human Person Detection and Pose Estimation*.
 - C. Schenck, **J. Tompson**, D. Fox, S. Levine, *Learning Robotic Manipulation of Granular Media*, CoRL 2017.
 - **J. Tompson**, K. Schlachter, P. Sprechmann, K. Perlin, *Accelerating Eulerian Fluid Simulation With Convolutional Networks*, ICML 2017 & ICLR 2017 workshop.
 - G. Papandreou, T. Zhu, N. Kanazawa, A. Toshev, **J. Tompson**, C. Bregler, K. Murphy, *Towards Accurate Multi-person Pose Estimation in the Wild*, CVPR 2017.
 - A. Elhayek, E. De Aguiar, A. Jain, **J. Tompson**, L. Pishchulin, M. Andriluka, C. Bregler, B. Schiele, C. Theobalt, *MARCO*n*I: ConvNet-based MARKerless Motion Capture in Outdoor and Indoor Scenes*, PAMI '16
 - Awarded the '16 NYU Janet Fabri award for outstanding doctoral dissertation.
 - R. Goroshin, J. Bruna, **J. Tompson**, D. Eigen, Y. LeCun, *Unsupervised Learning of Spatiotemporally Coherent Metrics*, ICCV 2015
 - Awarded the 2015 NYU Henning Biermann award for exceptional contributions to education and service.
 - **J. Tompson**, R. Goroshin, A. Jain, Y. LeCun, C. Bregler, *Efficient Object Localization Using Convolutional Networks*, CVPR 2015
 - A. Elhayek, E. De Aguiar, A. Jain, **J. Tompson**, L. Pishchulin, M. Andriluka, C. Bregler, B. Schiele, C. Theobalt, *Efficient ConvNet-based Markerless Motion Capture in General Scenes with a Low Number of Cameras*, CVPR 2015
 - **J. Tompson**, A. Jain, Y. LeCun, C. Bregler, *Joint Training of a Convolutional Network and a Graphical Model for Human Pose Estimation*, NIPS 2014
 - A. Jain, **J. Tompson**, Y. LeCun, C. Bregler, *MoDeep: A Deep Learning Framework Using Motion Features for Human Pose Estimation*, ACCV 2014
 - R. Goroshin, J. Bruna, A. Szlan, **J. Tompson**, D. Eigen, Y. LeCun, *Unsupervised Feature Learning from Temporal Data*, NIPS 2014 workshop & ICML.
 - A. Jain, **J. Tompson**, M. Andriluka, G. Taylor, C. Bregler, *Learning Human Pose Estimation Features with Convolutional Networks*, ICLR 2014
 - **J. Tompson**, M. Stein, Y. LeCun, K. Perlin, *Real-Time Continuous Pose Recovery of Human Hands Using Convolutional Networks*, ACM TOG/SIGGRAPH 2014
 - Awarded the 2013 Jacob T. Schwartz Ph.D. Fellow for outstanding performance in the NYU Ph.D. program.
 - Invited Talk: K. Perlin, M. Stein, **J. Tompson**. *ARCADE: A System for Augmenting Gesture-Based Presentations*, SIGGRAPH Real-Time Live demo (2012).
 - **J. Tompson**, A. Dolin and P. Kinget, *2.6GHz RF Inductive Power Delivery for Contactless On-Wafer Characterization*, IEEE ICMTS, 2008 (Patent: WO/2009/065040)

WORK EXPERIENCE

- Google Brain
Google Inc.: 2015-present
 - **Senior Research Scientist:** Worked under Vincent Vanhoucke for the Brain robotics group on a number of projects (RL, fluids, tracking, etc).
- Google Daydream (VR)
Google Inc.: 2013-2015
 - **Research Scientist:** Worked on Google Cardboard team on an unreleased project.
 - Developed in-house hand-tracking system for google cardboard.
- Perceptive Code LLC
startup: 2015-2015
 - **Cofounder:** Started small consulting company (with Arjun Jain) to provide state-of-the-art vision-based tracking solutions. IP assets were sold.
- Body / Hand Tracking
NYU: 2011-2014
 - **PhD Student:** multiple publications on tracking joint locations of human bodies and hands in cluttered RGB scenes. State-of-the-art results on FLIC, LSP, MPII.
- Unsupervised Learning
NYU: 2013-2014
 - **PhD Student:** Created a novel slow-feature auto-encoder architecture to take advantage of temporal coherence in unlabeled video data. (NIPS workshop 2014)
- Distributed Systems
MongoDB Inc: 2013
 - **Summer intern:** working with the MongoDB kernel server team (under Alberto Lerner). Redesigned the distributed lock protocol for the configuration server.
- Integrated Circuits
Epoch Micro: 2007-2011
 - **Hardware Engineer:** Researched state-of-the-art mixed-signal IC solutions for telecom and data-conversion systems.
 - Prompt time-to-market, feature-rich, low-cost and high-performance products.
- IC Design
Columbia: 2006-2008
 - **Master's thesis:** Fabricated contactless IC testing using inductive coupling.
 - Investigated on-chip ring-oscillator matching and compared statistics to theory.

OTHER EXPERIENCE AND QUALIFICATIONS

- Teaching Assistant
Columbia & NYU: 2006-2007, 2011-2015
 - **NYU:** Computer Vision: D. Geiger. Introductory CS, Computer Graphics, Computer games: K. Perlin.
 - **Columbia:** Circuits: C. Zukowski, Wireless Com: P. Diament, VLSI Circuits: A. Bhavnagarwala.
- Programming Languages
 - C/C++/C#, Java, Lua, LISP, OpenGL/CL, CUDA, GLSL, Matlab, HTML, Python

REFERENCES

- Chris Bregler – bregler@courant.nyu.edu
- Yann LeCun - yann@cs.nyu.edu