

# Tomer Weiss

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## Education:

### PhD Candidate in Computer Science, University of California, Los Angeles

Focus: Computer Graphics, Optimization methods, Machine Learning

Advisor: Prof. Demetri Terzopoulos [dt@cs.ucla.edu](mailto:dt@cs.ucla.edu)

Since 09/2013  
Expected Graduation:  
03/2018

### MS Computer Science, UCLA

Master's thesis: *Make It Float*: an optimization-based method for creating 3d printable floating objects

09/2013 to 05/2016

### BSc Computer Science, Tel Aviv University

03/2009 to 06/2012

## Recent Professional Positions:

### Research Intern, Autodesk Research

06/2017 to 09/2017

- **Deep Learning GAN** (Generative Adversarial Networks) for interior layout space synthesis
- Further optimization and parsing of the Deep Learning pipeline results for generating realistic interior layouts

### Machine Learning Intern, A9 (Amazon Search), Palo Alto, CA

06/2016 to 09/2016

- **Search Relevance**: Designing new features for machine learning model that determines rank and order of products
- Improving search results leading to better product ranking and higher purchase probability
- **Gradient Boosted Decision Trees, Python, Hadoop, Pig, A/B Tests**

### Software Engineering Intern, Bloomberg LP, New York, NY

06/2015 to 09/2015

- Working on trading execution platform for fixed income asset trading (TSOX)
- Design and implementation of new 3d party integration client-facing service between buy side firms and liquidity venues

### Research and Teaching Assistant, University of California, Los Angeles

Since 09/2014

- Computer Graphics research, focusing on fast optimization methods for computer graphics applications
- Leading discussion sections, preparing and grading homework, holding office hours and assisting students
- Taught C, OCaml, Python, Prolog, Java

### Software Application Engineer, PTC

04/2012 to 04/2013

- Developing Creo-ProEngineer, CAD software for mechanical engineers. C\C++, Perl, Python

**Selected Teaching Skills:** Teaching Assistant. Preparing and leading discussion sections. Grading homework and exams.

CS 131: Programming Languages theory and applications. Taught Ocaml, Python, Java.

CS 130: Software Engineering. Supervised and coordinated multiple students teams, working on industry or open source projects.

CS 35L: Fundamentals of open-source and other software tools and environments. Taught Unix, Bash, C.

## Selected Professional Skills:

**Strong problem solving**, Python\Cython, C\C++, CUDA, Java, JavaScript, OCaml, Scala, Scheme, Assembly, functional programming and Bash; scripting; SQL, Pig, Hadoop, Spark;

**Fast numerical methods**, 3D Geometry modeling, Physics-based modeling, 3D printing design; OpenGL, OpenCV, Camera Pose;

**Advanced Math and Computer Science Theory** (Calculus, Linear Algebra, Set Theory, Logic, Proofs, Discrete Math, Algorithms);

**Machine Learning and Deep Learning Applications** (Classification-CNN, Generative Models-GAN), **scikit-learn**, PyTorch

**Numerical/stochastic/statistical-based optimization**, Linear programming, Image Processing; R; Matlab; Mathematica, LaTeX;

**Graphics Frameworks and Tools**, Blender; OpenVdb, Houdini, Procedural Content Generation;

## Publications\Manuscripts:

*Deep Learning of Neuromuscular Control for Pointing Tasks in a Biomechanical Human Model*, planning to submit to ACM SIGGRAPH 2018

*Biomimetic Perception for Human Sensorimotor Control*, submitted to CVPR 2018

*Position-Based Multi-Agent Dynamics for Real-Time Crowd Simulation*, T.Weiss, A.Littenecker, C.Jiang, D.Terzopoulos

ACM SIGGRAPH Symposium of Computer Animation [abstract version](#)

Full version in ACM SIGGRAPH [Motion in Games 2017 Best Paper Award](#)

*Automated Layout Synthesis and Visualization From Images of Interior or Exterior Spaces*, T.Weiss, M.Nakada, D.Terzopoulos

IEEE CVPR 2017 [Vision Meets Cognition](#)

Fast, Scalable Layout Synthesis, T.Weiss, A.Littenecker, N.Duncan, C.Jiang, C.Yu, D.Terzopoulos

Under review in IEEE Transactions on Visualization and Computer Graphics

Make it Float: an algorithm for 3D printing objects that float in surprising angles, T.Weiss, D.Terzopoulos

UCLA Computer Science [Technical Report](#) 2016