(916) 673-8854 **Daniel Bolya** dbolya@gatech.edu
Website • GitHub Atlanta, GA

TECHNICAL SKILLS

Programming Languages
C++, Python, Java, JavaScript, Lua

Other Languages
SQL, HTML, CSS, MATLAB, LaTeX

Libraries
C++ Caffe, CUDA, OpenCV, SDL, OpenGL
Py PyTorch, TensorFlow, Numpy
JS Node.js, jQuery

Utilities
Git, PostgreSQL, AWS

Interests
Computer Vision, Machine Learning, Computer Graphics, Game Engine Development, GPU Acceleration

PUBLICATIONS

TIDE (ECCV 2020 *Spotlight*) [Website, Code, Paper]
- A method and toolkit for identifying and assessing the impact of errors in object recognition

Daniel Bolya, Sean Foley, James Hays, Judy Hoffman. *TIDE: A General Toolbox for Identifying Object Detection Errors*. ECCV 2020.

Likelihood Landscapes (ECCV 2020 *Workshop*) [Paper]
- Showed how likelihood and adversarial robustness are connected via "likelihood landscapes"

Fu Lin, Rohit Mittapalli, Prithvijit Chattopadhyay, **Daniel Bolya**, Judy Hoffman. *Likelihood Landscapes: A Unifying Principle Behind Many Adversarial Defenses*. ECCV 2020 Adversarial Robustness in the Real World.

YOLACT++ (TPAMI 2020 *Journal*) [Code, Paper]
- Improved version of YOLACT

Daniel Bolya, Chong Zhou, Fanyi Xiao, Yong Jae Lee. *YOLACT++: Better Real-time Instance Segmentation*. TPAMI 2020.

YOLACT (ICCV 2019 *Oral*) [Code, Paper]
- Real-time instance segmentation using a novel prototype-based approach
- Four times as fast as the state-of-the-art at the time and performs well

Daniel Bolya, Chong Zhou, Fanyi Xiao, Yong Jae Lee. *YOLACT: Real-time Instance Segmentation*. ICCV 2019.

Handwritten Math Equation Solver (ISEF 2016 *Finalist*) [Code, Abstract]
- 1st place computer science in the Sacramento STEM Fair, finalist at the Intel International Science and Engineering Fair, and honor's mention at the California State Science Fair

Daniel Bolya, Dylan McLeod. *Using Artificial Intelligence Systems for Autonomous Visual Comprehension and Handwriting Generation*. Presented at ISEF 2016.

PROJECTS

3D Software Renderer (2018)
- From-scratch 3D CPU mesh renderer in C++ that supports arbitrary vertex and fragment shaders, textures, and obj file loading

Trivia App Data Mining (2016-2018)
- Mined information from Wikipedia and other sources to turn into trivia questions

3D Voxel Game Engine (2015-2016) [Code]
- Completely custom C++ 3D game engine built from scratch with OpenGL and SDL

Alexa-Enabled Trigram Compliment Generator (HackDavis 2017) [Code, DevPost]
- Animated interface and compliment generator using Alexa skills as a backend made in 24 hours

AWARDS

NVIDIA Best Paper Runner-Up **2020**
Likelihood Landscapes: A Unifying Principle Behind Many Adversarial Defenses
COCO Challenge Most Innovative Award **2019**
YOLACT: Real-time Instance Segmentation
HackDavis Honorable Mention **2017**
Alexa-Enabled Trigram Compliment Generator
Intel International Science and Engineering Fair (ISEF) Finalist **2016**
Sacramento STEM Fair 1st Place Category Award in Math and CS **2016**
Sacramento STEM Fair 3rd Place Grand Prize Award **2016**
California State Science Fair Honorable Mention **2016**
Intel Excellence in Computer Science **2016**
Handwritten Math Equation Solver

EDUCATION

Georgia Institute of Technology **August 2020 – Ongoing**
Machine Learning PhD Student 3.83 GPA
University of California Davis **September 2016 – March 2019**
B.S. in Computer Science (Math Minor) 3.98 GPA

EMPLOYMENT

NSF Graduate Research Fellowship **May 2020 – Ongoing**
Georgia Institute of Technology **August 2019 – Ongoing**
Graduate Research Assistant
University of California, Davis **April 2019 – August 2019**
Research Assistant
University of California, Davis **June 2018 – March 2019**
Undergraduate Student Researcher