Kastan Day

(206) 327-5693 | kastanday@gmail.com | kastanday.com | github.com/kastanday

EDUCATION

Swarthmore College — **Swarthmore, PA**
*Pursuing Bachelor of Arts in **Computer Science**, minor in Cognitive Science (neuroscience focus)* — *2016 – Spring 2020*

- Relevant Coursework: Data Structures and Algorithms, Software Engineering, Adaptive Robotics, Algorithms, Relational Databases, Prog languages, Intro to Computer Systems, Calculus, Linear Algebra

Phillips Academy Andover — **Andover, MA**
High school — *2013-2016*

WORK EXPERIENCE

NASA (LaRC Autonomy Incubator)
Software Engineering Intern — *Summer 2018*

- Continuing research from last summer, I extended my vision pipeline for robotic in-space satellite assembly to recognize objects, and their precise 3-D pose, based on their intrinsic shape from 3D point clouds from a RGB-D camera; a process called 3D point registration.
- I implemented and later contributed to two open source research projects to speed up 3D registration, resulting in a 10x improvement in my algorithm's runtime from the standard PCL implementation. **Primary tech:** OpenCV and PCL. Intel Realsense D435, Doxygen, C++

NASA (LaRC Autonomy Incubator)
Software Engineering Intern — *Summer 2017*

- Solely responsible for the computer vision, in **OpenCV**, for prototype autonomous robotic arm to replace the current 15-foot, human controlled module on the International Space Station used for in-space manipulation.
- Coded **Linux dev** environment, in C++ in **ROS** framework in a NASA rapid research group.

NASA (LaRC Autonomy Incubator)
Video Production Intern – my best work — *Summer 2016*

AWARDS & ACOMPLISHMENTS

HackMIT – 1 of 10 overall winners out of 400+ teams and 1,250 students – 2nd year in a row — *2018*
Won best use of machine learning (Microsoft Azure), and the best use of natural language processing (Quora)

- Created an app to display 'snapshots' of your day to help you remember and search your life, and we encouraged you to journal about it. My section of the project was to generate a natural-language question or journaling prompt about an image.
- We won from the cleaver ways we constrained the unsolved problem of language generation, and quickly implemented a 3-layered ML pipeline to generate high-quality, natural sentences every single time. Key tech: TensorFlow, Stanford Parser, NLTK, Node.JS.

HackMIT – 1 of 10 overall winners out of 400+ teams and 1,250 students — *2017*
Won Best hack for the Social Good (Baidu) and Most Interesting use of Data (Hudson River Trading)

- Created web app for fake news detection where I cleverly implemented a novel stance detection model in **TensorFlow** to solve fake news. Input a link to an article, and if many reputable sources 'agree' with it then we can say it is most likely true. See more!

HackSwarthmore – 'Most innovative use of technology' winner

- I built the Ethereum smart contract backend in **Solidity** (the language of Ethereum smart contracts) which managed to fulfill agreements to pay content creators based on the number of upvotes they receive. Like Facebook or Reddit where users get paid.

First Ascent of Highest Unclimbed Peak in Colorado — *Summer 2016*

- Used my self-built drone to set ropes for the world's first drone-assisted first ascent of an unclimbed peak. Media coverage.

The Phillipian - *the oldest high school newspaper in the country* — *2013-2016*

- Founder of the Video section and lead 6-person team - worked 30 hrs/week on top of Phillips Academy workload.

Awarded $2,000 by the Abbot Academy Association to lead autonomous drone research & education — *2015*
InfoGAN research paper– novel research on an extension to Generative Adversarial Neural Networks — 2017
Blubo – created a marketplace Android app – beautiful UI, Firebase backend, ML feature set — 2017
Best Senior Economics Research Paper at Phillips Academy — *2016*
TEDxPA Speaker – Nutrition and a Whole Foods, Plant-Based Diet — *2013*
President's Award for Educational Excellence — *2013*
National Junior Honors Society Member — *2013*
Founders' graduation award – *best representing the spirit and integrity of the school* — *2013*

SKILLS

Languages: C++, C, Python, Javascript, Bash, Scala, SQL; English (Native), Spanish (Conversational)

Web & Mobile: Android dev (Java and XML), Firebase, and Node.js (Express, React), Flask

Data analysis: Keras, Theano and Tensorflow; sklearn, numpy and pandas

Technologies: Linux (high confidence), Ethereum smart contracts, the Adobe Creative Suite (video/photo/document creation), Git, LaTex

Bonus: I've biked across Cuba (~700 miles) and Morocco (~500 miles + busses). I love exploring my own way, off the beaten path.