# NICHOLAS CHARCHUT

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## **EDUCATION**

#### Massachusetts Institute of Technology

Cambridge, MA

Intended Bachelor of Science in the Department of Electrical Engineering and Computer Science – 4.5/5.0 GPA

Class of 2019

Relevant Coursework - Algorithms I, Discrete Mathematics, Computation Structures

Spring: Computer System Security and Engineering, Machine Learning, Software Construction

Santa Monica High School

Santa Monica, CA

Valedictorian – 4.5/4.0 Weighted/Unweighted GPA, ACT: 34 – M: 35, E: 36, CR: 32, S: 32

Class of 2015

Relevant Coursework - Multivariable Calculus, Linear Algebra

# **EXPERIENCE**

## **NASA Jet Propulsion Laboratory**

Pasadena, CA

Software Engineer, Computer Vision – Intern

Summer 2017

Optimized image alignment process for virtual construction of the Martian landscape, using .NET framework. Implemented PCA-SIFT to make feature matching more robust against various distortions between images. Enacting Graph Transformation Matching (GTM) to enhance efficiency in filtering false-positive matches.

GrabCAD Somerville, MA

Software Engineer – Intern

Winter 2016 - 2017

Effected communication protocol with printer drivers to collect job images and create a stop-motion video. Created a computer vision model using various techniques (SURF, KAZE, BoF) to detect printer failures.

Nano Terra, Inc.

Cambridge, MA

Software Engineer, R&D – Intern

Summer 2016

Developed graphical user interface for continuous live data collection from a network of integrated sensors. Coordinated with electrical engineers to design new sensor circuitry and construct new prototype iterations.

Designed a cohesive data structure to efficiently categorize and perform live analysis for statistical purposes.

## Computer Science and Artificial Intelligence Lab

Cambridge, MA

Project Arco – Researcher

Winter 2015 – Spring 2016

Built a web crawler to obtain biological models with their respective metadeta for analysis.

Implemented a cross-compiler to convert octave files to a unique dynamic problem solving language.

#### LEADERSHIP AND ACTIVITIES

Camp Kesem Cambridge, MA

Teen Counselor – Volunteer

Fall 2016 - Current

Planned engaging lessons, demonstrations, and experiments that promoted scientific understanding. Inspired and motivated elementary students to pursue careers in STEM fields.

## MIT Men's Varsity Baseball

Cambridge, MA Fall 2015 – Current

Contributed to the team's winning effort in the regular season NEWMAC title in the Spring of 2016.

Providing mentorship to underclassmen on time management, work ethic, and general life skills.

# Phi Beta Epsilon Fraternity

Cambridge, MA

Network Administrator

Spring 2016 - Current

Maintaining and updating the fraternity website, implementing new features to enhance user experience.

Communicating with MIT administration to effectively resolve network issues.

#### **SKILLS**

Pitcher