NICHOLAS CHARCHUT

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EDUCATION

Massachusetts Institute of Technology

Cambridge, MA

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

Class of 2020

Planned Coursework – Algorithms for Inference, Statistical Learning Theory, Graphical Models,

Bayesian Modeling and Inference

Massachusetts Institute of Technology (MIT)

Cambridge, MA

Class of 2019

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

Relevant Coursework - Inference and Information Theory, Machine Learning, Software Construction

OS Engineering, Machine Vision, Theoretical Statistics

EXPERIENCE

Zoox Foster City, CA

Perception Engineer – Intern

Summer 2019

Designed a multimodal deep learning system to quickly and accurately predict vehicle and agent occupancy.

Experimented with various architectures for one-shot and multiple-timestep occupancy predictions given LIDAR data.

Capital One New York, NY

Data Engineer – Intern

Summer 2018

Collaborated with developers company-wide to identify and solve integration issues of a real-time data pipeline.

Wrote intuitive interface for Angular developers, currently in production and maintained on the Capital One homepage.

IBM Cambridge, MA

Software Engineer, Computer Vision – Intern

Winter 2017-2018

Enriched dataset for automated sports commentary ML model by tracking player location on and off screen. Developed technique for labelling of players in 3D space using identification, pattern matching, and homography.

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. Enacted Graph Transformation Matching (GTM) to enhance efficiency in filtering false-positive matches.

RESEARCH

Probabilistic Computing Project

Cambridge, MA

Software Engineer, Probabilistic Programming – Researcher

Spring 2019 – Current

Created minimal viable product of querying latent dimensionality of image data, using the Iris dataset.

Planning to enrich Bayesian database with the integration of images, allowing for effective prediction given sparse labels.

Computer Science and Artificial Intelligence Lab

Cambridge, MA

Software Engineer, Autonomous Driving – Researcher

Summer 2017 – 2018

Constructed a pipeline to infer and draw driven paths given image and LIDAR data from the KITTI dataset. Architected a model capable of estimating epistemic and aleatoric uncertainty of a proposed path in real-time.

Leadership and Activities

Camp Kesem

Cambridge, MA

Teen Counselor - Volunteer

Fall 2016 – Current

Serve as a mentor for children affected by their parent's cancer during a one week, sleep-away summer camp.

MIT Men's Varsity Baseball

Cambridge, MA

Pitcher

Fall 2015 - Spring 2019

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

SKILLS AND INTERESTS