

# Charlie DeLorey

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## EDUCATION

**Tufts University**, Medford, MA

- Bachelor of Science in Computer Science, May 2020
- Coursework includes: Programming Languages, Algorithms, Reinforcement Learning, Computational Physics

## PROJECTS

**3D Printed 5-Fingered Robot Hand:**

September 2019 - May 2020

- Designed, fabricated, and programmed anthropomorphic hand controlled via serial protocol for integration with robot arm setup and advanced humanoid manipulation tasks

**Oscillator Computational Model:**

April 2020

- Programmed mathematical model of a pendulum's motion in 2D and extrapolated to 3D

**Reinforcement Learning with A Compliant Gripper:**

September 2019 - December 2019

- Implemented a reinforcement learning algorithm for learning the optimal grip position of a tennis ball using a gripper augmented with a compliant material

**Rhythm Device:**

January 2019 - May 2019

- Prototyped device that emits a rhythmic vibration, as a treatment tool for use by occupational therapists

**Large Key Typing Interface:**

Weekend-long Harvard Hackathon Project

- Designed and programmed Arduino-based keyboard device with larger keys for those without fine motor skills

## EXPERIENCE

**Teaching Assistant, Programming Languages**, Tufts University, Medford, MA

September 2019 - May 2020

- Held weekly office hours to guide students through concrete and theoretical course material, including code debugging, theoretical proofs, and functional programming

**Research Assistant, Sinapov Lab**, Tufts University, Medford, MA

• **Project 1 and 2:**

May 2019 - May 2020

- Wrote Python and ROS (robotics middleware) drivers for Universal Robot dual arm configuration
- Incorporated ROS feature to human-robot interaction augmented reality project

• **Project 3:**

May 2018 - August 2018

- Programmed TurtleBots for human-computer interaction projects using ROS
- Improved student-made robotic arm for TurtleBot using 3D printing, laser cutter, and Arduino

## SKILLS & INTERESTS

Foreign Languages: Limited working proficiency in French

Software: AutoCAD, Inventor, Onshape, Rhino, Matlab, Python, C++, C, ROS, Google Drive, Microsoft Office

Interests: Science, Engineering, Foreign Languages, Traveling, Comedy, Philosophy, Science Fiction

## ORGANIZATIONS

**Secretary and Media Chair, oSTEM (Tufts chapter)**, 2018 - 2020

- Maintained meeting notes, chapter email, and Facebook page; designed events for the Tufts student body

**Member, Robotics Club**, 2019 - 2020