Loc **Trinh**

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Experience

MIT CSAIL Learning and Intelligent Systems | UG Researcher

July 2016 – Present | Cambridge, MA

- Exploring hueristic search, suboptimal search, and anytime search algorithms to build motion planning and execution system.
- Applying supervised and reinforcement learning techniques to help robot learn basic primitive skills such as pushing a block or screwing on a bottle cap.
- Analyzing the effect of handcrafted features vs. NN generated features on the accuracy and stability of learned models.

MIT Natural Language Group | Undergraduate Researcher

Jan 2015 – October 2015 | Cambridge, MA

- Implemented a Naive Bayes learning system to classify English and Chinese news articles on mentionings of harmful food contaminants.
- Designed a system to scrape, retrieve, and store recent world news from online resources, such as CNN, BBC, and Xinhua.

Northrop Grumman Corp. | Software Intern

June 2016 – Aug 2016 | Los Angeles, CA

- Collaborated with manager to build an analytical LCC model for use in the company's air and space programs.
- Integrated different divisions within the sector into the model such as Global Supply Chain (GSC), Business Development (BD), and Engineering Design Trades.
- Worked with ECA's Director and VP of Global Products in meetings to discuss and improve the model.

MIT EECS Department | Lab Assistant

Jan 2015 – May 2015 | Cambridge, MA

- Tutored and assisted MIT students in 6.01 Intro to EECS weekly design labs and software labs.

Projects

racecar | C++, Python, ROS - Autonomous AI

Spring 2016

- Worked in a team to develop and program an RC racecar to self-drive in the MIT tunnels
- Ultilized advance sensors such as laser range finder, ZED stereo camara, structure 3D camera, and IMU to self-navigate.
- Implemented both full-scale SLAM approach and reactive approach.
- Won 2nd place in the final grand challenge.

battleshipAI | Python - Probability & Graphics

Summer 2016

- Programmed 3 different bots to play the game Battleship with strategy ranging from complete randomness to maximum likelihood.
- Probabilistic approach yielded an average 44 moves made per board, ~50 moves improvement over complete randomness and ~15 moves improvement over classical playstyle.

faceRecognition | Python - Machine learning & sci-kit

Fall 2015

- Programmed an app in Python to video capture and detect friends' faces using the Sci-kit learning library.
- Improved program's accuracy using Randomized SVD decomposition to construct eigenfaces.
- Succeeded in recognizing familiar faces while failing to detect and extract faces from natural pictures.

langHelper | Web - MEAN stack & UI design

Summer 2015

- Designed an online learning web application that helps user learn the syntactic differences between programming languages, such as those between C++, C, Java, Python, Javascript, and more.
- Improved application functionalities with AJAX content, MongoDB query, and mobile responsiveness.

Education

Massachusetts Institute of Technology

Expected Graduation: 2018 | Current GPA: 4.8

- S.B. in Computer Science and Engineering
- M.Eng. in Computer Science
- Minor in Mathematics

Relevant Coursework

Computer Science

- 6.005 Software Construction
- 6.006 Introduction to Algorithms
- 6.008 Inference Algorithms
- 6.141 Robotics: Science and Systems
- 6.867 Graduate Machine Learning
- 6.869 Advances in Computer Vision

Mathematics

- 18.02 Multivariable Calculus
- 18.06 Linear Algebra
- 18.200A Discrete Applied Mathematics
- 18.410 Design & Analysis of Algorithms
- 18.600 Probability & Random Variables

Technical Skills

Electronic Design

- Arduino/Teensy
- Raspberry PI
- Soldering
- Breadboard prototyping
- Use of test equipment

Programming

- Python, Numpy, Scikit
- Java, JUnit, Git
- C/C++, OpenCV
- JavaScript
- MATLAB

Web Development

- HTML, CSS, Bootstrap
- Django
- Node.js, MongoDB
- LAMP stack
- Adobe Photoshop

Leadership

Simmons Hall Officers |Tech Co-Chair 2016

- Webmaster for dorm website and provided tech assistant for +350 residents within Simmons Hall.
- Co-designed the new Simmons DB.

Simmons Hall Officers | EE Co-Chair 2015

- Headed the EE Laboratory and managed electronic tools and soldering equipments, providing a safe and convinience working environment for lab users.

Activities

- Sailing
- Snowboarding
- Hiking & Camping
- Kayaking
- Swimming
- DJing