

James Clark

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Education

August 2015 - Present

American University, Washington, D.C. - *B.S. Computer Science, Minor: Mathematics*

Overall GPA 3.78, Major GPA, 3.9

January 2014 - May 2015

Massasoit Community College, Brockton, MA - *A.S. Computer Science Transfer*

GPA 3.9

Skills

Python Clojure, C, Java, Matlab, Linux, Git source control tools, Machine Learning, Tensor Flow, Windows, Mathematics, Scientific Computing, SQL, R

Experience

May 2017 - PRESENT

American University Computer Science Department. - *Research Assistant*

- I am currently working under the SuperVision of Dr. Nathalie Japkowicz in her data science laboratory at American University.
- The focus of my research is to use change point detection methods to improve threshold determination of autoencoders. With this we can account for concept drift and outliers.

August 2016 - PRESENT

American University Mathematics Department, Washington D.C. - *Calculus II && Calculus I Grader*

- Responsibilities Include: Grading homeworks and quizzes for both Calculus I and II for Professor Olga Cordero- Brana
- Skills required are to have gotten at least an A- or above in both classes and to have a recommendation from a professor. Also must have knowledge of differential and integral calculus as well as knowledge on infinite sequences and series.

May 2016 - August 2016

Mac Landscaping, Plymouth, MA - *Laborer*

- Worked for a small local landscaping company doing miscellaneous tasks such as cutting grass, edging, weeding ect.
- Left to go back to school

January 2015 - August 2015

Enomass, Stoughton, MA - *Delivery Driver*

- Made deliveries for a small wine distributor in and around Metro Boston Area
- Left due to pursuing school in Washington DC

November 2012 - May 2014

Teltron Engineering Inc, Foxboro Ma - *CNC Machinist*

- Worked for a small metal fabrication company in Foxboro Mass primarily working on a CNC punch press machine. I would run and maintain the machine which was an Amada Pega 357 Turret Punch Press. I also would make changes to the computer code if needed to save time, tools, or material.
- Also would do other duties around the machine shop such as sanding, bending, or helping packing in the warehouse.
- I decided to leave to pursue school full-time

Projects

Chord Recognition - As a senior year capstone project, me and my partner Erica Jurado developed , a machine learning application to recognize chords as music was being played. The neural network and signal processing is all done in Python. There is also a front end design which uses a javascript server to run the program on the web. You can visit www.jamespclark.com to try our application called Chordgi, just input a wav file and have it analyze the music to tell you what chords are in the song.

A Fine-Grained Threshold-Setting Approach for Anomaly Detection in Data Streams - Used one class learning algorithms in a machine learning setting to detect anomalies in streaming data. Program was written in Python and R which used change point detection as an informed adaption approach to variable sizes sliding windows. I was first author and second author was Dr. Nathalie Japkowicz, paper was submitted to FLAIRS conference on 11.20.2017 for publication.

Classical Glauber Ising Model - Created a simulation of magnetic states of atoms and modeled how they go through a phase transition during an increase/decrease in temperature. Program was written in C and run on a linux based cluster, after I used MATLAB for analysis on the data. Currently still working with Postdoctoral student Andrew Koller at Michigan State on his research on quantum many body particles.

Awards

Massasoit Community College-

Member of Phi Theta Kappa, Honors Society of Community Colleges,
Dean's List Fall 2014 and Spring 2015

American University -

Member of Tau Sigma, Honors Society for Transfer Students that receive a GPA above 3.5
after transferring.

Member of Upsilon Pi Epsilon, Honors Society for Computer Science students,
Dean's List Spring 2016, Spring 2017