Christopher Johnson

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EDUCATION

UNIVERSITY OF CALIFORNIA, SAN DIEGO
BS in Mathematics and Computer Science (UCSD), GPA: 3.35/3.52(Major)
2016 - 2020

COURSEWORK

* IP indicates in progress

COMPUTER SCIENCE
Design and Analysis of Algorithms
Advanced Data Structures
Theory of Computation
Computer Organization
Software Tools & Techniques
Reinforcement Learning for Robotics(Graduate)

MATHEMATICS
Calculus
Linear Algebra
Probability
Partial Differential Equations
Numerical Analysis
Real Analysis
Abstract Algebra
Combinatorics
Graph Theory
Topology & Knot Theory
Probabilistic Combinatorics (Graduate)
Information Geometry (Graduate)
Statistics
Game Theory

ADDITIONAL
Organic Chemistry
General Chemistry
General Physics
Biology Lab Experience
Dance

SKILLS

• PyTorch • Tensorflow
• ROS • Apache Spark
• Flask • REST • RedisDB
• Git
• Python • Java • C++ • C
• Assembly • Bash • Scala

WORK EXPERIENCE

AMERICAN EXPRESS | Technology Intern
June 2019 – August 2019 | New York, New York

- Created Slack task management extension using Requests, Flask, and RedisDB, saving the company 13 dollars per user per month.
- Built RSS feed showing Webex online meeting notifications on Slack to facilitate team communication.

UCSD COMPUTER SCIENCE / MATHEMATICS | Tutor / Teaching Assistant
September 2018 – Present | La Jolla, California

- Worked as a tutor / teaching assistant for Discrete Mathematics and Introductory Logic courses in the UCSD Computer Science Department .
- Graded for Honors Abstract Algebra, and Ordinary Differential Equation courses in the UCSD Math Department.

RESEARCH AND RESEARCH PROJECTS

RL PROJECT Nov 2019 – Dec 2019 | ECE-276C Robotics Reinforcement Learning
Modified 'simple-spread' multi-agent reinforcement environment (arXiv:1706.02275) for collision avoidance and applied Learning with Objective Learning Awareness (arXiv:1709.04326) algorithm to train multiple agents simultaneously.

ROBOTICS RESEARCH Jan 2019 – Present | ARCLab UCSD
Implemented MPNet algorithm with libtorch (C++ version of pytorch) to contribute to motion planning project. Currently familiarizing with reinforcement learning concepts and robotics libraries.

PROJECT RESEARCH Mar 2018 – Jan 2019 | K. Levchenko
Worked on project for recovering fingerprints from compressed fingerprint data such as minutia data. Researched and implemented different mathematical models to better reconstruct fingerprints such as the orientation field model. Experimented with NIST standard library MINDCT and different image processing kernels to extract features from rolled fingerprints.

OTHER EXPERIENCES

ALGORITHMS INTERN Dec 2017 – Jan 2018 | Jiusuo Data Technology Ltd., Xi'an China
Worked on a project for identifying spam callers by creating reliable data sets, choosing features on Xi'an caller data. Then wrote Scala scripts using Apache Spark built in library mllib to train a binary classifier model.

RADIOLOGY INTERN July 2017 – Sept 2017 | Sharp Healthcare
Developed python application for extracting data from csv files and plotting statistics on radiation dosage for CT scans. Created Latex manual for CT technologists for company software