Caijun Qin

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EDUCATION

Aug 2019 – May 2022
University of Florida ♦ Gainesville, FL
Major: Computer Science B.S.
Minor: Statistics
Major GPA: 3.92 / 4.00
Relevant Coursework: Data Structures and Algorithms, Machine Learning, Performant Programming in Python, Competitive Programming, Principles of Programming Language, Intro to Data Science, Programming with Data in R, Intro to Software Engineering

Aug 2018 – May 2019
Florida State University ♦Tallahassee, FL
Major: Computer Science B.S.
Major GPA: 4.00 / 4.00
Relevant Coursework: Intro Programming I (C++), OO Programming, Linear Algebra, Calculus III

RESARCH INTERESTS

Machine Learning, Big Data Analytics, Graph Theory, Network Algorithms, Optimization

RESEARCH EXPERIENCE

Mar 2021 – Present
Theoretical Modeling of Dynamic Vegetation in Agricultural Terrains for Active Passive Microwave Retrieval of Soil and Crop Parameters
Undergraduate Research Assistant ♦ Institute of Food and Agriculutural Sciences, University of Florida
Advisor: Jasmeet Judge
Developing functional-structural plant model (FSPM) in Blender to simulate crops at different growth stages

May 2020 – April 2021
Predictive Sampling Method for Spread Models in Networks
Undergraduate Researcher ♦ University Scholars program, University of Florida
Advisor: Peter Dobbins
Author of research paper to be published April 2021 to the UF's *Journal of Undergraduate Research*
Developed new sampling method for large networks based on quota sampling of high-degree nodes
Used varying statistics of samples to evaluate proposed algorithm against other sampling algorithms

Jan 2019 – May 2019
Cost Minimization and Optimization of Criteria-based Matchings
Honors Credit Project (3 credits) ♦ University Honors Program, Florida State University
Advisor: Peixiang Zhao
Implemented Hungarian Algorithm in C++ to optimally choose pair from bipartite graph representing costs
Designed comparable algorithm but optimally chooses pair based on multiple positive attribute values

PROJECT EXPERIENCE

Feb 2021 – Feb 2021
DocVR: Virtual Reality AI Health Assistant
Database Engineer ♦ BrickHack 7 (RIT Hackathon)
Virtual doctor powered by Google DialogFlow and Unity game engine
Configured CockroachDB distributed database with NLP capabilities to log virtual doctor's speech

Feb 2021 – Feb 2021
Summarify
Backend Engineer ♦ AngelHacks 2.0
Created console application to summarize text from any number of uploaded .txt, .docx, or .pdf files
Created wireframe for web application interface allowing user selection of summarization algorithm

Feb 2021 – Feb 2021
TournamentMaster
Solo Team ♦ EconHacks 2021 (Economics Hackathon)
Developed customizable Solidity script to simulate a tournament through many rounds, pertaining to business applications such as contract bids and job candidate selections
Tournament tree data structure with customizable winning conditions and number of winners

Jan 2021 – Jan 2021 **Sentinel**
Backend Engineer ♦ SwampHacks VII (UF Hackathon)
Website displays interactive and colored world map based on selectable social indexes across nations
Constructed a CSV-to-JSON converter to facilitate importing custom datasets to *Cloud Firestore* database

May 2020 – Aug 2020 **OCR Note-taking Application**
Backend Engineer ♦ UF Performant Programming Course
Maintained customizable pipeline to preprocess text images with OpenCV and Pillow library tools
Optimized parameter values for different image preprocessing functions and experimentally determined the best selection and order of functions to boost optical character recognition (OCR) accuracy

Jan 2020 – Apr 2020 **American Sign Language Image-to-Letter Translator**
Student / Group Member ♦ UF Machine Learning Course
Collaboratively built classification system to translate ASL hand images with supervised ML paradigm
Engineered pipeline that preprocesses image, trains classifier, predicts letter, and evaluates accuracy

Sept 2019 - Present **JTreeLib**
Individual Contributor ♦ Open-Source Project
Java library of tree and tree-like data structures including trie, b-tree, ternary tree, segment tree, and more

AWARDS & HONORS

Feb 2021 **Best Covid-19 Hack**
BrickHack 7 ♦ Rochester Institute of Technology, Rochester, NY

Feb 2021 **4th Place**
EconHacks 2021 ♦ Virtual Hackathon

Jan 2021 **InfoTech Challenge** for most innovative use of a public dataset for the public good
SwampHacks VII ♦ University of Florida

Mar 2019 **1st Place in Lower Division**
FSU Spring 2019 Programming Competition ♦ Florida State University, Tallahassee, FL

Jan 2019 **University Scholars Program**
Lateral Admission into Honors Program ♦ Florida State University, Tallahassee, FL

FUNDING & SCHOLARSHIPS

May 2020 **Russell and Mary Hyatt McCaughan Scholarship**
$1000 ♦ University of Florida, Gainesville, FL

Feb 2020 **University Scholars Program**
$1750 ♦ University of Florida, Gainesville, FL

May 2018 **University Freshman Scholarship**
$1200 / Semester ♦ Florida State University, Tallahassee, FL

QUALIFICATIONS

Jul 2020 **M001: MongoDB Basics**
May 2015 **Microsoft Office Specialist: Word 2013**
May 2015 **Microsoft Office Specialist: Excel 2013**
May 2015 **Microsoft Office Specialist: PowerPoint 2013**

PROFESSIONAL SKILLS

Languages	English, Mandarin Chinese
Programming Languages	Python, Java, C++, C#, Solidity, R, Go, JavaScript
Markup Languages	HTML, CSS, XML, YAML
Databases	MySQL, SQLite, CockroachDB, MongoDB, Cloud Firestore
Frameworks & Tools	Node.js, React, JQuery, Bootstrap