Caijun Qin

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EDUCATION

May 2022 — **UNIVERSITY OF FLORIDA** ♦ Gainesville, FL, USA
Major: Computer Science B.S. & Statistics B.A. **Major GPA:** 3.91 / 4.00
Relevant Coursework: Software Engineering, Data Structures and Algorithms, Machine Learning, Performant Programming in Python, Competitive Programming, Principles of Programming Language, Data Science, Programming with Data in R, Statistical Learning

May 2019 — **FLORIDA STATE UNIVERSITY** ♦Tallahassee, FL, USA
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, Natural Language Processing, Cognitive Computing, Graph Theory, Network Science

UNIVERSITY SERVICES

Nov 2021 – May 2022 — **Data Science and Informatics (DSI)**
Project Coordinator ♦ University of Florida

Aug 2021 – May 2022 — **UF Chapter of Association of Computing Machinery (ACM)**
Treasurer ♦ University of Florida

Aug 2021 – May 2022 — **Open Source Club (OSC)**
Project Lead ♦ University of Florida

Aug 2021 – May 2022 — **Google Developer Student Club (GDSC)**
Tech Lead ♦ University of Florida

Aug 2021 – May 2022 — **Software Engineering Club (SEC)**
Webmaster♦ University of Florida

Aug 2021 – May 2022 — **Society of Software Developers (SSD)**
Treasurer ♦ University of Florida

Jan 2021 – May 2022 — **UF Hackathoners**
Treasurer ♦ University of Florida

Apr 2019 – Aug 2019 — **FSU Chapter of Association of Computing Machinery (ACM)**
Treasurer ♦ Florida State University

RESEARCH EXPERIENCE

Jun 2021 – Present — **Using AI to Trace the History of Race and Inequality**
Undergraduate Research Assistant ♦ Department of Classics, College of Liberal Arts & Sciences, University of Florida
Advisor: Dr. Eleni Bozia

- Engineering NLP pipeline to retrieve, transform, and index Latin and Greek texts for querying
- Leads team of students to webscrape XML files and extract raw text sections from classical literature
- Leveraging high performance computing (HPC) and Apache Spark to operate information retrieval tasks in parallel

Jun 2021 – Aug 2021 — **Research Experience for Undergraduates at UNT**
REU Recipient ♦ Department of Information Science, College of Information, University of North Texas
Advisor: Dr. Junhua Ding

- Quantitatively evaluated traditional machine against deep learning algorithms on legal text classification
- Performed transfer learning using BERT variants and Sentence-BERT to classify corporate legal contracts and clauses
- First author of research paper accepted to the JURISIN 2021 workshop and proceedings

May 2020 – April 2021 — **Predictive Sampling Method for Spread Models in Networks**
Undergraduate Researcher ♦ University Scholars program, University of Florida
Advisor: Dr. Peter Dobbins

- Developed new sampling method for large networks based on quota sampling of high-degree nodes
- Authored paper published to the UF Journal of Undergraduate Research

PROJECT EXPERIENCE

Jan 2021 – Present

List of Hackathons

Participant ♦ Organizer Varies

- Frequently compete in hackathons hosted by various institutions and organizations
- Selected list of projects: https://github.com/Fennec2000GH/Hackathon-Repository-Hub/blob/main/README.md
- Online full portfolio of projects: https://www.devpost.com/Fennec2000

Aug 2021 – Dec 2021

Plant Root Analysis Using Machine Learning

Student / Group Member ♦ Senior Project Course, University of Florida

Advisor: Dr. Alina Zare

- Performed image segmentation of minirhizotron (MR) root images using U-Net deep learning architecture
- Improved original model by tweaking hyperparameters and training with only subset of original training data
- Programmed framework to apply multiple cumulative learning paradigms on models created with PyTorch

Mar 2021 – Oct 2021

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: Dr. Jasmeet Judge

- Developing functional-structural plant model (FSPM) in Blender and SpaceClaim to model crops across growth stages

May 2020 – Aug 2020

OCR Note-taking Application

Backend Engineer ♦ Performant Programming Course, University of Florida

- Integrated machine learning and database functionalities for optical character recognition (OCR) app
- Maintained customizable pipeline to preprocess text images with OpenCV and Pillow
- Experimentally optimized parameter selection and preprocessing steps to boost text prediction accuracy

Jan 2020 – Apr 2020

American Sign Language Image-to-Letter Translator

Student / Group Member ♦ Intro to Machine Learning Course, University of Florida

- Collectively built classification system for ASL translation with supervised KNN model (~90% accuracy)
- Engineered pipeline that preprocesses image, trains classifier, predicts letter, and evaluates accuracy

Jan 2019 – May 2019

Cost Minimization and Optimization of Criteria-based Matchings

Honors Project Student ♦ University Honors Program, Florida State University

Advisor: Dr. Peixiang Zhao

- Implemented Hungarian Algorithm in C++ to optimally choose pair from bipartite graph representing costs
- Designed similar algorithm but which optimally chooses pairs based on sum of positive attribute values

PUBLICATIONS

Qin, C., Yang, Y., Chen, H., & Ding, J. (2021). *A Comparison Study of Machine Learning and Deep Learning for Legal Contract Understanding* [Manuscript submitted for publication], *Department of Computer & Information Science & Engineering (CISE), University of Florida.*

Qin, C. (2021). Predictive Sampling Method for Spread Models in Networks. *UF Journal of Undergraduate Research*, *23*(Fall 2021). https://doi.org/10.32473/ufjur.v23i.128429

PRESENTATIONS

Qin, C., Yang, Y., Chen, H., Ding, J. (2021, November). A Comparison Study of Machine Learning and Deep Learning for Legal Contract Understanding [Paper presentation]. In *International Workshop on Juris-Informatics 2021 (JURISIN 2021)* (pp. 110–123), Keio University, Yokohama, Kanagawa, Japan.

Qin, C. (2021, March). Predictive Sampling Method for Spread Models in Networks. In *2021 Virtual Spring Undergraduate Research Symposium*, University of Florida, Gainesville, Florida, USA.

AWARDS & HONORS

May 2021 **Best Use of Datastax Astra**
RU Hacks 2021 ♦ Ryerson University, Toronto, ON, CAN

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

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, Gainesville, FL, USA*

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

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

FUNDING & SCHOLARSHIPS

Jun 2021 **NSF REU: College of Information at UNT**
$7000 ♦ *University of North Texas, Denton, TX, USA*

Mar 2021 **Gartner Group Information Technology Fund**
$1000 ♦ *University of Florida, Gainesville, FL, USA*

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

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

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

CERTIFICATIONS

Apr 2021 **MATLAB Machine Learning Onramp**
Apr 2021 **MATLAB Onramp**
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 ***Proficient:*** Python, C++, Java, R, Rust, Julia
Working Knowledge: JavaScript, Matlab, C#, Solidity, Go
Markup Languages HTML, CSS, XML, YAML
Databases MySQL, SQLite, CockroachDB, MongoDB, Cloud Firestore
Frameworks & Tools Apache Spark, Node.js, React, Angular