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:** 3.93 / 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

RESEARCH 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* ▪ Lead students from existing research project on a novel geoparsing algorithm based on recursive neural networks ▪ Anticipates comparison study of other tree-based algorithms to be submitted as in a paper to SIGKDD or SIGIR 2021
Aug 2021 – May 2022	**UF Chapter of Association of Computing Machinery (ACM)** *Treasurer* ♦ *University of Florida* ▪ Managed reimbursements for expenses of meetings and social events ▪ Distributed funding to special interest groups (SIG) under ACM at the University of Florida
Aug 2021 – May 2022	**Open Source Club (OSC)** *Project Lead* ♦ *University of Florida* ▪ Supervise team development of Documiner, an NLP web application that converts uploaded documents to a Wiki ▪ Oversee mostly technical aspects e.g. QA, summarization, topic modeling, and knowledge graph for cross-references
Aug 2021 – May 2022	**Google Developer Student Club (GDSC)** *Tech Lead* ♦ *University of Florida* ▪ Synthesize and co-deliver presentations on software technologies and concepts applicable to industry ▪ Showcase live demos of working code to provide hands-on workshops on software libraries and tools
Aug 2021 – May 2022	**Software Engineering Club (SEC)** *Webmaster* ♦ *University of Florida* ▪ Maintain accurate and up-to-date information for club website and renew domain when needed
Aug 2021 – May 2022	**Society of Software Developers (SSD)** *Treasurer* ♦ *University of Florida* ▪ Request student government and other sources of funding to finance club activities
Jan 2021 – May 2022	**UF Hackathoners** *Treasurer* ♦ *University of Florida* ▪ Manages budget for prizes, travel, club promotions, and other costs requested by the hackathon team
Apr 2019 – Aug 2019	**FSU Chapter of Association of Computing Machinery (ACM)** *Treasurer* ♦ *Florida State University* ▪ Reinstated budgeting process for bi-annual programming competitions and social events by FSU Chapter of ACM

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 clean, translate, 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 and Apache Spark to processes tasks on corpora 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
- Assessed 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
- First author of research 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