

# 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

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## RESEARCH INTERESTS

Machine Learning, Natural Language Processing, Cognitive Computing, Graph Theory, Network Science

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## 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

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## 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 BERT transfer learning using Tensorflow/Keras and HuggingFace libraries
- First author of research paper accepted to the [JURISIN 2021](#) workshop

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](#)

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## **PROJECT EXPERIENCE**

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Jan 2021 –  
Present

### **List of Hackathons**

*Participant ♦ Organizer Varies*

- Frequently partake in open-source project competitions (hackathons) hosted by various institutions and organizations
- Detailed list: <https://github.com/Fennec2000GH/Hackathon-Repository-Hub/blob/main/README.md>

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 Agricultural 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

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## **PUBLICATIONS**

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**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>

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## **PRESENTATIONS**

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**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	<b>Best Use of Datastax Astra</b> <i>RU Hacks 2021 ♦ Ryerson University, Toronto, ON, CAN</i>
Feb 2021	<b>Best Covid-19 Hack</b> <i>BrickHack 7 ♦ Rochester Institute of Technology, Rochester, NY, USA</i>
Feb 2021	<b>4<sup>th</sup> Place</b> <i>EconHacks 2021♦ Virtual Hackathon</i>
Jan 2021	<b>InfoTech Challenge</b> for most innovative use of a public dataset for the public good <i>SwampHacks VII ♦ University of Florida, Gainesville, FL, USA</i>
Mar 2019	<b>1<sup>st</sup> Place in Lower Division</b> <i>FSU Spring 2019 Programming Competition ♦ Florida State University, Tallahassee, FL, USA</i>
Jan 2019	<b>University Honors Program</b> <i>Lateral Admission into Honors Program ♦ Florida State University, Tallahassee, FL, USA</i>

## FUNDING & SCHOLARSHIPS

Jun 2021	<b>NSF REU: College of Information at UNT</b> <i>\$7000 ♦ University of North Texas, Denton, TX, USA</i>
Mar 2021	<b>Gartner Group Information Technology Fund</b> <i>\$1000 ♦ University of Florida, Gainesville, FL, USA</i>
May 2020	<b>Russell and Mary Hyatt McCaughan Scholarship</b> <i>\$1000 ♦ University of Florida, Gainesville, FL, USA</i>
Feb 2020	<b>University Scholars Program Stipend</b> <i>\$1750 ♦ University of Florida, Gainesville, FL, USA</i>
May 2018	<b>University Freshman Scholarship</b> <i>\$1200 / Semester ♦ Florida State University, Tallahassee, FL, USA</i>

## CERTIFICATIONS

Apr 2021	<b>MATLAB Machine Learning Onramp</b>
Apr 2021	<b>MATLAB Onramp</b>
Jul 2020	<b>M001: MongoDB Basics</b>
May 2015	<b>Microsoft Office Specialist: Word 2013</b>
May 2015	<b>Microsoft Office Specialist: Excel 2013</b>
May 2015	<b>Microsoft Office Specialist: PowerPoint 2013</b>

## PROFESSIONAL SKILLS

<b>Languages</b>	English, Mandarin Chinese
<b>Programming Languages</b>	Python, C++, Java, Julia, R, Rust, C#, MATLAB, Solidity, Go, JavaScript
<b>Markup Languages</b>	HTML, CSS, XML, YAML
<b>Databases</b>	MySQL, SQLite, CockroachDB, MongoDB, Cloud Firestore
<b>Frameworks &amp; Tools</b>	Apache Spark, Node.js, React, Angular