

Jue Guo

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OBJECTIVE

Jue Guo, a Ph.D. candidate in Computer Science. With a notable teaching background in deep learning and pattern recognition, Jue has focused his research on machine learning techniques, especially in the realms of image classification, natural language processing, **continual learning**, and medical imaging. Skilled in Python, GitHub, and JavaScript, he's adept at leveraging various machine learning frameworks to address complex challenges.

EDUCATION

The State University of New York at Buffalo
PhD, Computer Science

Buffalo, NY
August 2022 – Current

The State University of New York at Buffalo
Master of Science, Robotics

Buffalo, NY
August 2020 – June 2022

Wake Forest University
Bachelor of Science, Computer Science

Winston-Salem, NC
August 2015 – May 2019

EXPERIENCE

Instructor
University at Buffalo

August 2023 – Present
Buffalo, NY

- Led the course CSE676 Deep Learning; conducted weekly lectures and office hours.

Instructor
University at Buffalo

July 2023 – August 2023
Buffalo, NY

- Led the course CSE455/555 Introduction to Pattern Recognition; held weekly lectures and office hours.

Machine Learning Engineer
Zhejiang Society For Mathematical Medicine

June 2019 – August 2020
Hangzhou, China

- Worked in Lab under Zhejiang University.
- Developed a bone age detection system for Zhejiang No.1 People's Hospital's Orthopedics Department.

Software Engineer Intern
Nanjing Ohappure Tech Co. Ltd

June 2018 – August 2018
Nanjing, China

- Participated in the "Fresh Water, Rural China" project.
- Updated the water quality database to align with company products.
- Delivered a demo for efficient database access.

Software Engineer Intern
Nanjing Ohappure Tech Co. Ltd

June 2017 – August 2017
Nanjing, China

- Enhanced the company website using WordPress, Javascript, CSS, and HTML.
- Recognized as the Best Intern of Summer 2017.

PROJECTS

- Pascal-Like Compiler in C++** | *C++, VScode* September 2017 – December 2017
- Developed a compiler in C++ for a Pascal-inspired language, gaining hands-on experience with data structures and compiler logic. The project was recognized by the instructor as “*the most outstanding in the class.*”
- Course Registration Website** | *Javascript, HTML, CSS* September 2019 – December 2019
- Led the development of a front-end interface using PHP for a course registration system. The project emphasized rapid language acquisition and timely delivery. Adapted to user feedback to ensure a functional final product.
- Simple Parallel Cashier System** | *C++, OpenMP, MPI* September 2019 – December 2019
- Simulated a grocery store checkout system, incorporating features like discounts and promo codes. Implemented in C++ using MPI to leverage the capabilities of modern hardware.
- Multi-Human Pose Estimation** | *Tensorflow, Python* September 2021 – December 2021
- Focused on multi-person pose estimation to localize 2D keypoints of multiple individuals in an image. Explored the bottom-up approach, predicting all keypoints and then grouping them, with an emphasis on graph clustering applications.

TECHNICAL SKILLS

Languages: Python, Javascript, CSS, HTML, C++, Java
Libraries: Tensorflow, Pytorch, OpenMP, MPI

COURSES

Undergraduate CS Courses

- CSC 111A** | *Intro CS — Java*
- Projects: “Wheels of Fortune”, “Black Jack”, “Connect Four”, “Connect Four-GUI”
- CSC 112** | *Computer Science Fundamentals — C++*
- Projects: “Pig Latin”, “Normalization”, “Grade Calculator”
- CSC 165** | *Problem Solving Seminar*
- Focused on competition-level problem-solving techniques
- CSC 211** | *Computer Organization*
- Explored assembly language and hardware-oriented aspects of CS
- CSC 221** | *Data Structure and Algorithm*
- Projects: “3-D Array”, “Doubly Linked Lists”, “Binary Search Tree”, “Heap”, “Hash Table”, “Huffman Code”, “Page Rank”, “SudokuBoard”
- CSC 222** | *Advanced Data Structures and Algorithms*
- Projects: “RSA”, “Matrix Multiplication”, “Knapsack Problem Optimization”
- CSC 231** | *Programming Languages*
- Studied various programming paradigms and language design principles
- CSC 241** | *Computer Systems*
- Explored OS resource management and interface design; Projects: “Simple Shell”, “Sleeping Barber”, “Conway’s Problem”, “Unisex Bathroom”, “Scheduling Method”
- CSC 331** | *Software Engineering*
- Introduction to large-scale software system design and solutions
- CSC 333** | *Principles of Translators*
- Explored techniques for translating high-level programming languages; Topics included lexical analysis, parsing, and optimization
- CSC 346** | *Parallel Computation*
- Studied techniques for parallel and high-performance computing
- CSC 355** | *Numerical Methods*

- Focused on numerical computation and floating-point arithmetic

CSC 399 | *CS Mastery Exam*

- Comprehensive exam covering core CS concepts

Graduate CS Courses

CSE 521LEC | *Operating System*

- Studied the design and implementation of operating systems, including process management, memory management, file systems, and concurrency

CSE 546LEC | *Reinforcement Learning*

- Explored the principles and techniques of reinforcement learning, including value functions, policy optimization, and exploration-exploitation trade-offs

CSE 555LEC | *Pattern Recognition*

- Explored foundations of pattern recognition algorithms; Topics included statistical and structural methods, clustering, and small sample size problems

CSE 568LEC | *Robotics Algorithms*

- Comprehensive introduction to software for autonomous mobile robots; Topics included kinematics, sensors, Bayes filter, localization, and mapping

CSE 573LEC | *Computer Vision and Image Processing*

- Introduction to AI techniques for computer vision; Topics included image formation, edge detection, feature extraction, and object detection

CSE 574LEC | *Machine Learning*

- Explored machine learning techniques; Topics included decision trees, neural nets, Bayesian learning, and reinforcement learning

CSE 673LEC | *Computational Vision*

- Advanced course on computer vision; Explored deep learning applications in image recognition, detection, and segmentation

CSE 676LEC | *Deep Learning*

- Studied deep learning algorithms for multi-level data representations; Topics included neural networks, convolutional networks, and recurrent networks