# John Stone Zhang

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## EDUCATION

**Georgia Institute of Technology,** College of Computing — Expected May 2025
*Bachelor of Science in Computer Science* — GPA: 3.84
Coursework: Software Development Practices, Data Structures, Algorithms, Computer Hardware, Software Design Patterns, Artificial Intelligence, Database Systems, Machine Learning, Object Oriented Programming, Computer Vision

## TECHNICAL SKILLS

**Languages**: Java, JavaScript, C#, C, C++, Python, SQL, LaTeX
**Build Tools**: Maven, Gradle
**Version Control Tools**: Git
**Database**: MySQL
**Operating Systems**: Unix, Windows
**Software**: Unity, Jupyter Notebook, Emacs, Android Studio, Docker, Ghidra
**Machine Learning**: Regression, Decision Trees, Random Forests, Principal Component Analysis, Gaussian Mixture Model (GMM), Convolutional Neural Network (CNN), Hidden Markov Model

## ACADEMIC PROJECTS

**Flight Database**
- Constructed a schema for an airplane database in MySQL and created a UI with JavaFX

**Park GT**
- Worked in a team to create a web application in Java and Javascript that tracks user geolocation data and provides parking availability information for Georgia Tech Parking lots derived from user tracking information

**Android Studio Mobile Game**
- Developed a Frogger adjacent mobile game in Android Studio using Java and with AGILE principles
- Wrote Junit tests utilizing Mockito and exercised good practice software design patterns

**P2P File Sharer**
- Implemented a rudimentary P2P file sharing software from scratch in Python

**Camera Calibration and Fundamental Matrix Estimation**
- Used RANSAC to estimate the fundamental matrix and stitch images into a panorama in Python

**Semantic Segmentation**
- Constructed a deep neural network with Pytorch to perform image segmentation by fine tuning ResNet-50 and utilizing data augmentation techniques, Pyramid Pooling, and auxiliary loss.

**Vertically Integrated Projects: Embedded Systems eCTF Competition and CSAW**
- Built Docker images of car/key-fob pairs and secured a design for a hypothetical medical device in C
- Analyzed side channel attacks on cyber-physical systems and extracted capture flags from a programmed Arduino

**VGDev**
- Designed and implemented game items and game levels in Unity for a first person shooter

**ARC-PRIZE**
- Designed and implemented a solution to the ARC-AGI benchmark by utilizing a Domain System Language

## HONORS AND AWARDS

Zell Miller Scholarship — Fall 2021-Spring 2024
Morehead Honors College — Fall 2021-Spring 2022
Baldwin Scholarship — Fall 2021-Spring 2022