

# Krish Agarwal

[wonderingkrish@gmail.com](mailto:wonderingkrish@gmail.com)  
(669) 245-7474

Cupertino, CA  
[www.linkedin.com/in/krishagarwal](https://www.linkedin.com/in/krishagarwal)

## EDUCATION

### University of Texas at Austin

Aug 2022 - Present

- BS Computer Science, Turing Honors Scholar, Senior
- GPA: 4.0
- Relevant Courses: Artificial Intelligence, Principles of Machine Learning, Autonomous Intelligent Robotics, Information and Web Retrieval, Algorithms, Data Structures, Computer Organization and Architecture, Principles of Computer Systems

## TECHNICAL SKILLS

**Languages:** Python, Java, C, C++, CUDA, OpenAI Triton, NVIDIA PTX/SASS, x86 assembly, Verilog, SQL

**ML Skills:** PyTorch, NVIDIA Nsight Compute/Systems, high accuracy LLM quantization, vector database (Llama-Index), knowledge graph RAG (retrieval-augmented generation), image segmentation, scikit-learn

## EXPERIENCE

### Software Engineer Intern at IBM Research

May 2024 - Aug 2024

- Researched and implemented high-accuracy integer quantization for accelerated LLM inference using rotation-based approaches, improving processing speed by 60-100%
- Modified an existing rotation algorithm for specialized hardware, resulting in a GPU kernel that outperforms the state-of-the-art by 10-35% (depending on problem size)
- Used PyTorch-based model compilation with custom GPU kernels to further increase throughput

### Research Assistant in Learning Agents Research Group at UT Austin

June 2023 - present

- Implementing RAG architecture using Apache AGE knowledge graph and GPT-4 to track the state of environments from natural language updates
- Using GPT-4 to generate PDDL goals from natural language based on knowledge graph context

### Research Assistant in Living with Robots Lab at UT Austin

May - Aug 2023

- Created 3D scene reconstructions to enable semantic queries using Facebook Segment Anything and OpenAI CLIP models
- Improved CLIP model accuracy through custom retraining for mislabeled instances

### Mentor at StreetCode Academy

June 2021 - June 2022

- Taught Python programming to diverse student backgrounds, enhancing engagement

## AWARDS/CERTIFICATIONS

- UT Austin Distinguished College Scholar
- USA Computing Olympiad Gold-level competitor
- [Oracle Certified Associate](#) Java SE 8 Programmer
- National Merit Scholarship Semifinalist