

# Grant Skaggs

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Site: [grantskaggs.com](http://grantskaggs.com)

## Education

- May 2022 **University of Texas at Austin, Turing Scholar Honors Program**  
B.S. Computer Science & B.S. Mathematics; **GPA: 3.97**  
**Coursework:** Algorithms, Data Structures, Operating Systems, Computer Architecture, Logic and AI, Data Mining, Quantum Computing, Computer Graphics, Competitive Programming

## Experience

- Summer 2020 **Duolingo, Software Engineering Intern**
  - Deployed a weekly in-game timer boost prize for premium subscribers of Duolingo's **iOS** app
  - Worked closely with product designers to implement the new feature's user interface using **Swift** and **UIKit**
  - Developed the backend API in **Python**, **Java**, and **Kotlin**; recorded prize usage in a **SQL database**
- Summer 2019 **University of Texas at Austin, Undergraduate Research Assistant**
  - Applied **recurrent neural networks** to cache **data prefetching** in modern computer architectures
  - Developed and tuned a two-layer **LSTM** neural model using **TensorFlow** and **Python** to prefetch addresses

## Projects

- Summer 2020 **Pyxeled, Python**
  - Applied **machine learning** fundamentals to transform normal photographs into aesthetic pixel art
  - Implemented intelligent **clustering algorithms** to preserve image features at lower resolutions and limited color palettes; published a webpage gallery to exhibit generated pixel art at [grantskaggs.com/pyxeled](http://grantskaggs.com/pyxeled)
- Summer 2019 **RayTracer, C++**
  - Developed a **ray-tracer** in **C++** to render 3-Dimensional scenes
  - Implemented features: Polygonal meshes, 3D object rotation/distortion, recursive reflection and refractions, point and directional lighting, multithreading, variable material types, shadows, specular and diffuse shading
- Spring 2018 **Plexus, Java**
  - Worked with a team of four to design and build a 2D side-scrolling PC adventure role-playing game in **Java**
  - Finished Top 15 at the **BPA Nationals** Software Engineering Team competition in 2018

## Mentorship

- Fall 2020 **University of Texas Computer Science Department, Pod Mentor**
  - Leading a small group of first year CS students in a weekly seminar to build CS community and connect students to CS-specific resources
- Summer 2019 **Austin Chinese Educational Services, Course Instructor**
  - Led introductory Python and Scratch courses for elementary and middle school students; designed the course objectives and curriculum; taught daily lectures; helped students with their course projects

## Skills

**Proficient:** C/C++, Java, Python, HTML, CSS

**Familiar:** Javascript, Swift, Kotlin, Git, Bash, React, Google Firebase, Unity, numpy, scikit-learn, pandas, Agile Development, Unit / Functional Testing

## Honors / Awards

**Academic:** National Merit Scholar, National AP Scholar, Phi Beta Kappa Scholarship, CLHS Valedictorian

**STEM:** AIME Qualifier, Science Olympiad Gold Medalist, HackTX CDK Global Award