John Austin Miles

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EDUCATION

GEORGIA INSTITUTE OF TECHNOLOGY   Atlanta, Georgia
Bachelor of Science in Computer Science   Graduating May 2021
- 4.0 Cumulative GPA – Concentrations: Graphics & Modeling and Simulation

EXPERIENCE

MathWorks, *Natick, MA*
Software Engineering Intern   *May 2020 – August 2020*
- Delivered feature work for the interaction and architecture of the core MATLAB GUI layout framework.
- Coordinated parallel workflows with user experience and visual design experts in prototype development.
- Developed new CSS architecture design pattern and corresponding internal APIs to modify framework properties.

Georgia Institute of Technology, *Atlanta, GA*
Teaching Assistant - *Computing for Engineers*   *Fall 2018 – Present*
- Taught recitations, hosted review sessions, held weekly office hours, and proctored and graded exams.
- Contributed on the CS1371 Software Development team to create technology for grading automation.
- Worked with the CS1371 Test Team to write tests and ensure quality and fairness.

Pizza Hut, *Canton, GA*
Shift Manager   *January 2016-June 2017*
- Managed a team of over 20 employees to ensure productive workflow and cooperation.
- Handled inventory and daily finances to establish profitability and consistency.

PROJECTS

Happy Holidays (THREE.js, TypeScript, HTML)   *December 2019*
- Created a 3D scene with custom animations using mesh files, THREE.js modules, states, and an animation loop.
- Implemented GPU picking algorithms, physics-based animations, and audio through interactive programming.

RayTracer (TypeScript, HTML)   *September 2019*
- Improved boiler plate ray tracing code with anti-aliasing based on the Monte Carlo method.
- Added additional sampling effects to the ray tracer including soft-shadows and motion blur.

Inverse Kinematics (Python, PyOpenGL, PyBullet)   *March 2020*
- Optimized inverse kinematics problems in character animation using objective functions and gradient descent
- Rendered character animations from sequences of 3D matrix transformations using PyOpenGL

Virtual Reality Tweet Viewer (JavaScript, Typescript, Vue.js, CSS, HTML, THREE.js)   *January 2020 – May 2020*
- Developed an application that allows users to view tweets of a given hashtag on a virtual reality screen
- Rendered HTML and Vue applications to geometry layers and textures for use in the virtual landscape.

Cleanup Coordinator (Flask, HTML, Python, Bootstrap, PostgreSQL)   *February 2019 – Present*
- Utilized Twilio Texting, Google Sheets, and Amazon Web Services APIs for automated assignment and storage.
- Currently used by 50+ members weekly for managing the cleanup hour system at Georgia Tech Delta Chi.

CS1371 Autograder (MATLAB, Octave)   *January 2019 – September 2020*
- Contributed on migrating the current autograder to the cloud for instantaneous student feedback upon submission.
- Assisted in translating Matlab to Octave to run on a server-hosted Docker image, compliant with licensing

LEADERSHIP

Housing Manager
Delta Chi Fraternity   *March 2019 – Present*
- Managed safety and cleanliness of a multi-million-dollar property that houses 50+ members
- Dramatically improved the cleanup task system through automation with the CleanupCoordinator

Student Mentor   *February 2020*
Hack GT Horizons
- Helped participating students with technical and logistical issues during the 48-hour event
- Guided participants on problem solving strategies, leveraging knowledge from previous hackathons

SKILLS

Concepts: 2D/3D Transformations, Projection, Global Illumination, Shadows, Ray Tracing, Anti-Aliasing, Interactive Programming, Surface Subdivision, Keyframe Animation, Particle Dynamics, 3D Orientation, Rigid Body Simulation, Character Animation, Inverse Kinematics
Coursework: Computer Graphics, Computer Animation, Computer Simulation, Computer Audio, Machine Learning, Artificial Intelligence, Data Structures and Algorithms, System Design
Software: WebGL, THREE.js, GPU Programming, Amazon Web Services, Android Studio, Heroku, Microsoft Office, Flask, JetBrains IDEs, JavaFX, Linux, Processing, Git, Jupyter
Languages: Advanced: JavaScript, CSS, Python, Java, MATLAB | Intermediate: Typescript, C, HTML | Basic: Kotlin
Communication: Technical Writing, Presentations, Public Speaking, API Documentation Authoring, Client-Facing Communication

ACTIVITIES

Volunteer: Anna Crawford Children's Center – Chairman of the Youth Advocacy Board, Tech Beautification Day – Volunteer, Georgia Tech Delta Chi – Associate Member Class Fundraising Chair, Night Shelter – Volunteer, Trees Atlanta – Volunteer
Awards: Duane and Marry Meyer Scholarship Recipient, Zell Miller Scholarship Recipient, Dean's List, Faculty Honors, HackGT 2019 Second Place (NSA), High School STAR Student, ACT: 36