

# Karthik Iyer

979-344-8646 | [kiyer@tamu.edu](mailto:kiyer@tamu.edu) | [linkedin.com/in/karthikriyer2](https://www.linkedin.com/in/karthikriyer2) | [github.com/KarthikRIyer](https://github.com/KarthikRIyer)

## EDUCATION

---

### Texas A&M University

*Master of Science in Computer Science*

College Station, TX

*Aug. 2023 – Exp. May 2025*

### Indian Institute of Technology, Roorkee

*Bachelor of Technology in Chemical Engineering, Minor in Computer Science GPA: 3.56*

Roorkee, Uttarakhand, India

*Aug. 2017 – July 2021*

## TECHNICAL SKILLS

---

**Languages:** Java, C, C++, Python, Groovy, Swift

**Databases:** Oracle, Apache Cassandra, Firebase Realtime Database

**Frameworks/Libraries:** OpenGL, matplotlib, VTK, OpenTimelineIO, PySide2, SpringBoot, Android Java Framework

**Software/Tools:** Git, CMake, Oracle SQL Developer, Apache Kafka, Blender, Adobe Premiere Pro, Adobe After Effects

## EXPERIENCE

---

### JPMorgan Chase & Co.

*Software Engineer 2*

Mumbai, Maharashtra India

*Feb 2023 - July 2023*

- Enhanced Kafka and Cassandra resiliency libraries to support multi-region, multi-cluster connections

*Software Engineer 1*

*July 2021 - Jan 2023*

- Developed SpringBoot microservices serving the bank's liquidity platform and a 7B USD business - APAC deposits
- Developed a sophisticated solution to improve resiliency of the Apache Cassandra and Apache Kafka platforms within the bank's liquidity ecosystem and distributed it as a library
- Collaborated with 20+ feature teams to support onboarding and adoption of the resiliency solution, leading to zero-downtime during a Cassandra Sustained-Resiliency event

### Google Summer of Code — Academy Software Foundation

*Student Developer*

Remote

*May 2020 – July 2020*

- Implemented C & Java bindings for the OTIO C++ library thereby introducing the library to more platforms
- Created a POC to auto-generate C bindings using LLVM tooling
- Wrote an SVG adapter, a prototype for a subtitles schema and CI automation with GitHub Actions

### Google Summer of Code — TensorFlow

*Student Developer*

Remote

*May 2019 – Aug 2019*

- Developed a cross-platform Data Visualization library (SwiftPlot) in Swift with multiple rendering backends
- Added a graphics output library to swift-jupyter using pure Swift, to enable usage in Google Colab

## PROJECTS

---

### Hair Simulation with Position Based Dynamics | C++, OpenGL

Nov 2023 - Present

- Implemented simulation of hair strands based on the paper: Fast Simulation of Inextensible Hair and Fur by M.Müller, T.Y. Kim and N. Chentanez
- Implementing hair-hair interaction using a particle density voxel and density gradient based approach

### RayTracer | C++, OpenImageDenoise, assimp

Sept 2019 – Sept 2020

- A C++ PathTracer based on PBRT and the Raytacing in one weekend series
- Implemented multithreading, tiled rendering, mesh loading with assimp and denoising using OpenImageDenoise

### Undergraduate thesis - Simulation of granular material | C++, VTK, LIGGGHTS

Aug 2020 – Apr 2021

- Simulated mixing of prolate particles of various sizes in a vibrating packed bed using LIGGGHTS and validated results against experimental data
- Wrote a C++ tool to process simulation dump files to calculate shearing rate borrowing techniques from Smoothed Particle Hydrodynamics

## CURRENT COURSES AND SKILLS LEARNED

---

**Computer Animation** | *Skinning, Blendshapes, Inverse Kinematics, Physical Simulation*

**Geometric Modeling** | *Affine Geometry, Spline Curves and Surfaces, Differential Geometry*

**Software Engineering** | *Software process models, Object Oriented Design, SQL and NoSQL Data Modeling*