

Delyce Twizeyimana

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EDUCATION

Brown University, MSc Computer Science

Providence, RI | **Expected Graduation May 2027**

Relevant Courses: Deep Learning, Computer Graphics, Computer vision, Biomedical Optics, Intelligent robotics

SKILLS

Languages: Python, JavaScript, TypeScript, C++

AI/ML: PyTorch, NumPy, Transformers, Vision Transformers, Object Detection,

Backend / Cloud: AWS (EC2, EKS, ECR), Docker, Kubernetes, NodeJs, CI/CD

Frontend: React, Next.js, Node.js, Tailwind CSS

RESEARCH EXPERIENCE

Research Assistant:

Providence, RI | Jan 2026 - May 2026

Assisting Professor **Fulvio Domini** with the 3D Vision Laboratory, focused on research in human vision, 3D perception, and action. Responsibilities include:

- Developing high-precision 3D visual stimuli using C++, Python, and OpenGL for psychophysical experiments.
- Implementing experimental software to study shape, depth, and motion perception.
- Developed custom render in python + OpenGL

INDUSTRY EXPERIENCE

Upwork : Software Engineer freelance

Bern, Switzerland | Sep 2024 – Feb 2025

- Built web scraping pipeline using Puppeteer to extract and integrate EU legislation for compliance systems.
- Implemented content-drift detection to automatically track legal updates, eliminating manual monitoring
- Automated scraping workflows using NestJS cron jobs and Bull queues for **batched processing and system stability**

EnAccess : Software Engineer

Voorschoten, Netherlands | May 2023 – Dec 2024

- Built cloud deployment pipeline using AWS (EKS, ECR, EC2, RDS, ElastiCache), enabling **fully automated releases**
- Implemented autoscaling infrastructure to optimize cost and maintain consistent performance under load
- Containerized and orchestrated open-source platform using Docker and Kubernetes, improving setup efficiency by **50%**

PROJECT

Physically Based Path Tracer

Brown University | Jan 2026 - May 2026

- Implemented a physically based path tracer from scratch that models light transport using geometric optics.
- Developed Monte Carlo integration, importance sampling, and Russian roulette termination for efficient estimation of the rendering equation.
- Implemented BRDF-based material shading, ray-scene intersection, camera models, and global illumination effects.
- Applied probability, linear algebra, and numerical methods to generate photorealistic images and study light transport simulation.

Re-Integrating AI Research project

Brown University | Jan 2026 - May 2026

- Image-goal conditioned diffusion policies for robot task learning.
- Key points rendering on image goal

Multi-Scale Physics Trajectory Prediction via Knowledge Distillation

Brown University | Apr 2026 - May 2026

- Designed a teacher-student transformer with multi-scale cross-attention (strides 1/4/16) and knowledge distillation to predict full ball trajectories from 0.125s of observation

Nerf Model

Brown University | Dec 2025 - Jan 2026

- Trained a Neural Radiance Fields (NeRF) model using an MLP to represent 3D scenes as continuous volumetric density and color fields from multi-view images.
- Implemented volumetric rendering via ray marching and positional encoding for novel view synthesis.

Triangle meshes Generative Model

Brown University | Nov 2025 - Dec 2025

- Training an autoregressive Transformer decoder to generate 3D triangle meshes from learned geometric tokens and reconstruct geometry for rendering
- Designed a physics-informed deformation module using EdgeConv GNNs to enforce smoothness, structural consistency, and physically plausible vertex motion.

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LEADERSHIP EXPERIENCE

KB21: *Javascript mentor*

Kigali, Rwanda | May 2023 – May 2024

- Led and mentored the upskilling 30+ developers in javascript from basic to advanced topics, conducted code reviews to ensure best coding practices by writing clean and maintainable code.
- Participated as an active presenter in weekly technical discussions and delivered presentations on various topics including git and release versioning.