

# Amithi Pathak

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## SKILLS

- **Programming & Tools:** Java • Python • SQL • JavaScript • React.js • JavaFX • C • R • HTML • CSS • MATLAB • Dafny • Git • Microsoft Office
- **Operating systems:** Windows • Linux • macOS
- **Development environments:** VS Code • IntelliJ • Android Studio • Eclipse • RStudio
- **Computer Graphics & Design:** Figma • Three.js • CAD • Adobe Creative Suite (After Effects, Animate, Photoshop, Illustrator) • Resolve • Canva
- **Languages:** English • Hindi

## EDUCATION

**Rutgers University New Brunswick** *Computer Science (B.S.)* *Expected Graduation: December 2025*

- **Academics:** GPA: 3.77, Dean's List (5 Semesters)
- **Organizations:** Secretary, Rutgers University Film Productions (RUFP) • Graphic Designer, HackRU • Artist/Cover Photographer, Rutgers Review Magazine
- **Relevant Coursework:** Software Methodology • Intro to AI • Algorithms • Data Structures • Discrete Structures • Computer Architecture • Database Management • Numerical Analysis & Computing • Linear Algebra/Optimization • Analytical Physics • Movie VFX • Calculus II • Data Science • Multimedia Composition

## EXPERIENCE

- **Research Assistant, Laboratory for Interactive Virtual Environments** 5/2024- 9/2024  
Use of Dafny to prove correctness of the widely used physics-based skinning algorithm based on dual quaternions. Applications in 3D character animation explored utilizing Three.js and HTML.
- **Marketing Graphic/Web Designer, HackRU** 09/2023 - Current  
Prototyped themed websites for Fall and Spring 2024 hackathons using Figma. Created graphic designs with Sketch & Figma used for promotional material including social media, t-shirts, email banners, stickers.
- **Java Mentor/Instructor, CODEie/SEWA International** 12/2020 - 1/2021  
Guided students aged 11-14 through the fundamentals of Object Oriented Programming using Java and JavaScript at a coding boot camp.

## PROJECTS

- **RU Pizzeria** 12/2024  
An app to streamline pizza order management using Java and Android Studio. Features include dynamic subtotal calculation, customizable 'Build Your Own' pizzas, and an intuitive GUI for selecting styles, sizes, and toppings with real-time order updates.
- **Mortgage-Backed Securities Management System** 12/2024  
Backend development for a Java app with PostgreSQL to package mortgages into securities. Implemented advanced filtering, dynamic rate calculations, and transactional updates using an NJ mortgage database.
- **Pathfinding Bot & Neural Network** 07/2024  
Designed a Python bot that navigates a complex grid using advanced search algorithms and a probability knowledge base. Developed a neural network in PyTorch to train a model on bot behavior and predict optimal moves.
- **Pixelation Effect with Webcam Feed** 1/2025  
Created a real-time pixelation effect for webcam video in Python and OpenCV, with interactive controls for cell size, color channels, and customizable circle patterns
- **Hummer – Team Lead** 01/2023 - 5/2023  
Led a UI/UX case study for a music-oriented social media app. Conducted research to identify key features and interface preferences. Collaborated with a team of six to design and prototype the platform using Figma.